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The Journal
of the
CANADIAN
DENTAL
ASSOCIATION

Le Journal
DE L'ASSOCIATION
DENTAIRE
CANADIENNE



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JANUARY, 1935.

VOL. 1., NO. 1.

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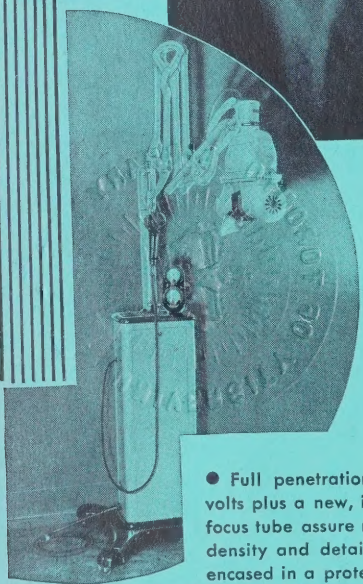


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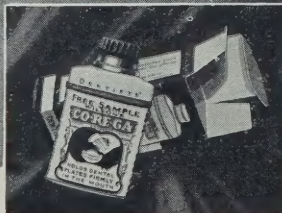
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LE JOURNAL DE L'ASSOCIATION DENTAIRE CANADIENNE

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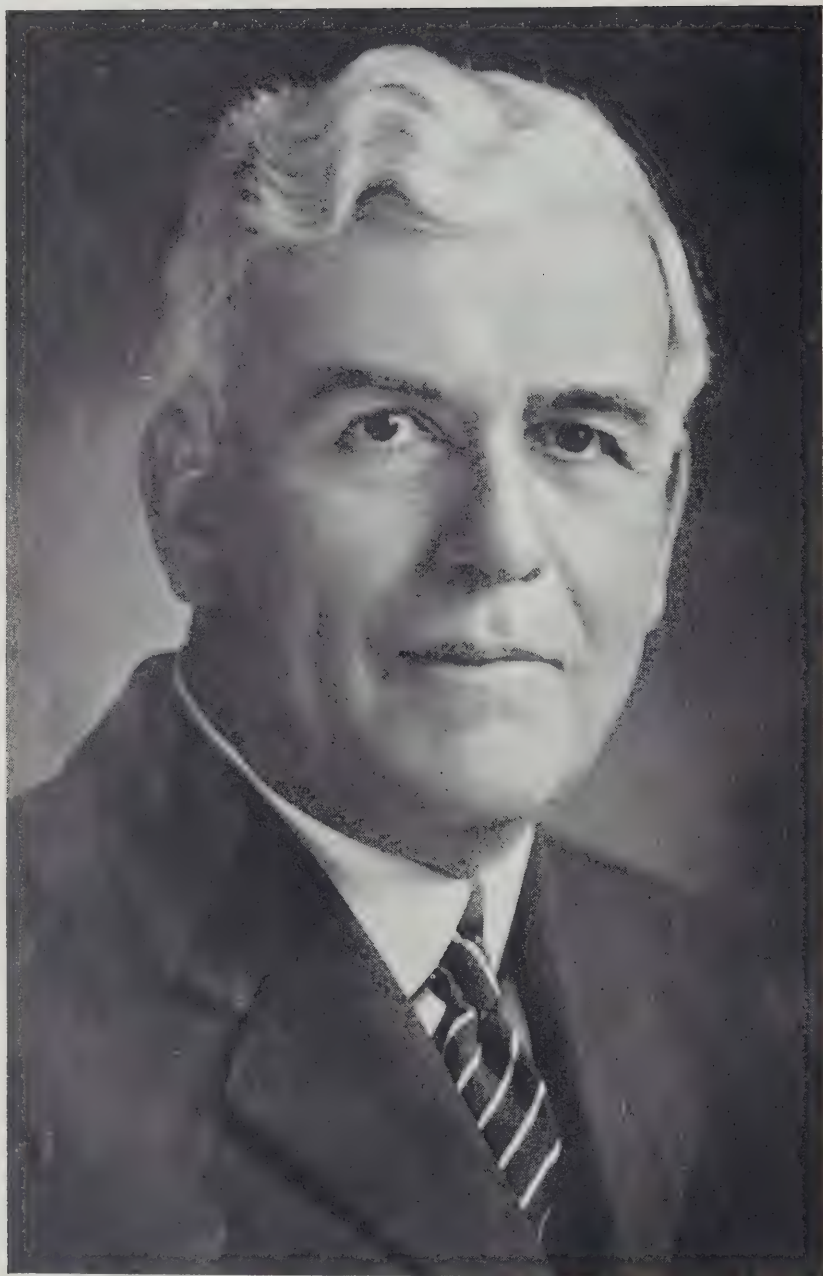
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A. E. WEBSTER, D.D.S., M.D.S., M.D., LL.D.

Honorary Dean of Department of Dentistry, University of Toronto, and Honorary
Editor of the Journal of the Canadian Dental Association; Le Journal de
l'Association Dentaire Canadienne.

THE JOURNAL

of the CANADIAN DENTAL ASSOCIATION

Vol. 1

JANUARY, 1935

No. 1

THE JOURNAL — SALUTATION

AS THE smallest child, John was taught by his staunch Presbyterian parents that what was to be, would be, and that no amount of effort on his part could change the predestined course of events.

One day John fell down the cellar stairs and bruised himself severely. The mother arrived just in time to see him pulling himself together, brushing off the dust, and to hear him say, "Thank the Lord that is over."

We do not advance any arguments for the doctrine of predestination, but we do express thanks that the years of effort that have been put forth in order to secure an official journal of our Canadian Dental Association have been rewarded at last.

For some years voices have been raised in a demand for a national journal, owned and directed by the Canadian Dental Association. These voices have continued to increase in volume and



M. H. GARVIN, *Editor*

have become increasingly insistent, and now their desires have been in part satisfied.

With this issue, The Journal of the Canadian Dental Association; Le Journal de l'Association Dentaire Canadienne goes into Volume One, Number One, thus marking another milestone in the history of dentistry in Canada.

The publication of a journal is intimately linked up with the growth and develop-

ment of our national Association.

When one visualizes the great need for such an Association, and mentally calculates the amount of work undertaken by our standing and special committees; when one considers the tasks still to be undertaken along the lines of research, dental health education, library bureau, bureau of chemistry and dental therapeutics, dental educational council, relief work, bureau of dental economics; and when one ponders on the national and international relationships, also the

talked-of changes in our scheme of things from a State dentistry point of view,—one is fired with the vital need of strengthening as rapidly as possible our Canadian Dental Association.

Our Journal stands at the door, ready to assist in this task, ready to broadcast throughout the Canadian profession an accomplishment in any one section of the profession, ready to bridge the gap between professional achievement and the public needs. It aspires, through our dental leaders, to mould the thought of the profession, to guide its hopes and clarify its problems, supporting all things which elevate and inspire. It will glean from every section of the Empire, every phase of dental life, from every realm of scientific research, in order to spur us on to greater endeavour. The Journal hopes to speak for our Association and to be its official organ, serving as a mirror of dental life in Canada and at the same time being a journal of constructive opinion, fighting in season and out of season for the highest and noblest principles, thus representing the best traditions of Canadian Dentistry.

The editorial policy of the Journal will be, as far as possible, under the direct control of the Association. It will be the constant aim of the officers and staff to make the Journal stand highest in honor, rank greatest in dignity, shine brightest in excellence, depict the widest range of triumph in the scientific achievements of our profession and interpret in the fullest possible manner the handwriting on the wall as that handwriting refers to dentistry. It should help to emancipate some of the older practitioners from bondage if they will but read; should encourage and inspire the younger practitioners;

and should enrich all, controlling thus both history and destiny and establishing more firmly a truly professional status throughout this Dominion of ours.

This Journal is also unique in that it is a bi-lingual journal, a certain portion of the text being in French. We welcome this innovation. We prize the cultural value it will prove to the English dentist if he will acquire a reading knowledge, at least, of the French language. We English dentists value also this closer fellowship with our brothers in the French section of our great two-langued Dominion. Dr. Philippe Hamel of Quebec City, who has given unstintingly of his time and strength in the interests of Canadian dentistry, has consented to edit the French section of our Journal. His interest, his enthusiasm, his loyalty, and his ability will prove to be a large factor in climbing the heights we expect to reach.

Dr. A. E. Webster, who has for thirty-five years edited Dominion Dental Journal and who has had showered upon him practically all the gifts that are in the hands of the profession to bestow, is to be our honorary editor, a relationship which is deeply appreciated by all concerned.

Dr. Stephen A. Moore of London, Ontario, past president of the Ontario Dental Association, will be our business manager. Dr. Moore has done endless work of a skilful and painstaking nature to bring the publishing of our national journal to a successful consummation.

The editor is fearfully aware of the many difficulties in editing a journal. Men are different, and what will suit one will not suit another. Some insist on the practical, while others are interested

largely in the various phases of research. Mistakes will be made and by some these will be magnified; but we believe that the large majority will appreciate the problem and be charitable. Whatever may come, the editor will sincerely try to have imaginative sympathy and to represent the interests of the dentists of Canada. The man without such sympathy is a stumbling-block in the world today. The editor wonders if he has that imaginative sympathy. Does he know the problems and difficulties and heartaches that many in our profession have to face, problems of diagnosis, of treatment, of office management, of practice building, problems of misunderstanding in the home, of sickness and of finance, the problems of the man who has danced to the tune of prosperity and now has drifted high and dry on the shores of defeat?

He sincerely trusts that if this sympathy is now lacking in any way, it will soon be acquired, that the *Journal* may prove to be of increasing value and inspiration to all, that it may be a most effective factor in developing a homogeneous good fellowship not only among the men who direct dental affairs throughout Canada, but also among the rank and file of our profession. To keep one's feet on the ground and yet live among the stars, is not an easy task.

The prophet Daniel was placed head of one hundred and twenty-two leaders in the kingdom of Darius the Median, and he had one hundred and twenty-two of them against him. He had the friendship of the King and he had the laws of

the Medes and Persians against him; consequently he was thrown into the den of lions. However, through all of these trials, he remained faithful to his convictions and his God. The editor of this *Journal* trusts that as long as he and those who are associated with him, hold this honor and this privilege of carrying on the constructive work of building up a strong national dental organization, they will remain not only faithful to the living God but may be faithful to the trust that has been placed in their hands, that whatever the influence of a personal nature that is brought to bear, whatever the political or group influence that is interjected into the dental council chambers, they will be true to the Vision that is theirs, that they will be true to the spirit of nationalism which insists that the welfare of the dentists of Canada from coast to coast shall take precedence over the desires and interests of any particular section of our country.

It is the ambition of all those connected with this publication that they should have insight into the dental problems of the day, that something may be said that will bring a measure of instruction, of inspiration, and of contentment to those who read; for "Happy is the man who has that in his soul which acts upon others as April airs on violet roots. Gifts from the hand are silver and gold, but the heart gives that which neither silver nor gold can buy. To be full of goodness, full of cheerfulness, full of sympathy, full of hope, causes a man to move on human life as stars move on dark seas to bewildered mariners."

Proclamation!

HERE begins a new chapter in the history of dentistry in Canada.

With this issue of the Journal, the Canadian Dental Association commences the publication of its own official organ, with an English and a French section.

The Dominion Dental Journal, which for thirty-five years has dominated the literary field in Canadian dentistry, enhancing the prestige of the Canadian dentist at home and abroad, has been taken over by the Canadian Dental Association.

Dr. A. E. Webster, the editor of *Dominion Dental Journal*, has co-operated with us in the most splendid manner and has wholeheartedly thrown in his lot with us, and becomes our Honorary Editor.

Dr. M. H. Garvin, of Winnipeg, Manitoba, becomes Editor-in-Chief, with a staff of outstanding dentists from coast to coast assisting him. Dr. Philippe Hamel, of Quebec, becomes editor of the French section. Dr. Stephen A. Moore, of London, Ontario, becomes business manager.



J. STANLEY BAGNALL
Secretary C. D. A.



G. L. CAMERON
President C. D. A.

Practically one hundred per cent. of all ethical dentists, numbering four thousand, are now members in good standing of the Canadian Dental Association, and they will receive the Journal. We gratefully acknowledge also the hearty co-operation of all the provincial organizations. Because of this splendid support, we bespeak for our new Journal the individual loyalty of every dentist in Canada, from the Atlantic to the Pacific.

In addition, we record our special thanks to the Consolidated Press, owners of *Dominion Dental Journal*, who have faithfully worked with us in the interests of Canadian dentistry and who will publish our new Journal.

We believe that we can produce something of distinction, that will endure, and to which we can render fealty and service with pleasure and enthusiasm.

Signed:—

GEORGE L. CAMERON,
President of Canadian Dental Assn.

J. STANLEY BAGNALL,
Secretary of Canadian Dental Assn.

"A SERIOUS DUTY TO PERFORM"

By The HONOURABLE MURRAY MacLAREN, Minister of Health.

I HAVE learned with much interest of the intention of the Canadian Dental Association to publish an official journal, and take the opportunity to congratulate the dental profession in Canada upon this added proof of their progressive spirit.

In these days of rapid scientific advance, frequent recourse to a journal embodying the most recent developments in one's particular field is essential if one is to keep abreast of the times. This age is one of rapid transition; new ideas are constantly pressing forward, and it is becoming increasingly difficult to keep in touch with the ever-expanding professional field. No times have produced such a revolution in scientific knowledge as ours, and progress is being made at an unprecedented rate.

The material contained in a well-balanced journal, composed as it is of articles, reviews, views and opinions of many persons skilled in their re-

spective fields, cannot but be of great benefit to its readers. Such a journal is not only a source of reference, it cultivates a taste for serious reading, is a storehouse of knowledge, to which the student has ready reference, a key to the best in scientific literature, and measures the scientific knowledge and attainments of a profession.

Those charged with the responsibility of producing the journal have a serious duty to perform, but I have no doubt that they will discharge it with honor to themselves and to the satisfaction of the profession which they represent and that the journal will occupy a foremost place among the scientific journals of this country.

May I then, on behalf of the Department of which I have the honor to be the Minister, congratulate the members of the Canadian Dental Association on their enterprise and wish them lasting success.

"The important thing in life is to have a great aim and to possess the aptitude and perseverance to attain it."—Goethe.

A NATIONAL JOURNAL

By C. N. JOHNSON, Chicago, Illinois.

THE need for a representative national organ in any profession must at once be apparent. Local societies and groups have their special interests and sometimes their special organs; provincial or state associations have their own autonomy, with policies that for the most part centre around the activities of a certain circumscribed territory, each dealing with a slightly different problem, and each influenced largely by the individual tendencies and personal propensities of the members who go to make up the group; all of these important in their way, but more or less limited in their function, and concerned chiefly with matters that in the very nature of things cannot make for the greatest breadth of vision or the more comprehensive conception of national problems.

A WIDER SCOPE

It is here that an official publication comes in with a widened scope, dealing with those activities that concern the broader issues of professional life as they affect the nation at large. This is why it is so appropriate that Canada should have a national organ in the dental profession. The time is ripe and the need is urgent. Dentistry in Canada has grown out of its swaddling clothes, and is ready to assume the full stature of professional manhood. Its sons and daughters are marching arm

in arm with the best dental minds of the world, and it is eminently fitting that they should be permitted to give full expression to their better impulses and their loftiest ambitions through the medium of a national magazine. They need one that shall be their very own, and that shall express their national characteristics, and be typical of the best traditions of their race and their craft.

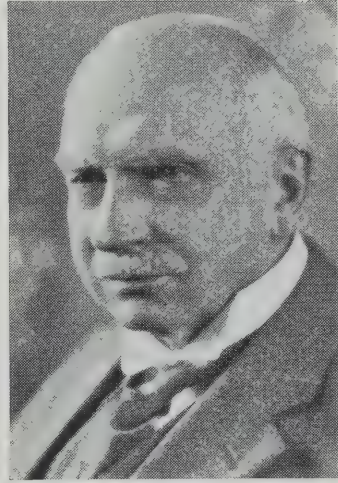
They are a virile body, these dentists of Canada, capable of the highest possible achievement, and wanting only a national consciousness to stir them to the deepest depths of professional devotion and consecration. Too long they have been content to jog along the easy road of well trod paths and alluring by-ways, basking in the sunlight of least resistance, but now they must be stirred to a more vigorous resolve and assume a professional initiative that shall place them among the leaders of the profession of the world.

"THEIR NAMES ARE KNOWN"

The dentists of Canada have the ability and the professional acumen to assume their proper place in the sun. All they need is breadth of vision and unity of purpose, and when I say their "proper place in the sun" I mean, of course, the sun of science. Some men there are in Canada who are doing a

notable work in the science and art of dentistry. Their names are known wherever dentistry is known, and they are honored among men, but—there are not a sufficient number of them. Canada must develop more research workers, more men who are willing to dig and delve in the hidden mysteries of our art. Think of the many problems that are seeking solution today in our profession. Think of dental caries, think of erosion, think of all the problems involved in full denture work and the confusion that still exists in connection with it, think of the myriad agencies through which dentistry might be made better and more beneficial to mankind. And think what it would mean to Canadian dentistry if one of our Canadian colleagues could announce the solution of even a single perplexing problem that has heretofore baffled the profession.

What would it not mean to Canada and to the world at large if in a coming issue of *The Journal of The Canadian Dental Association* some son of Canada would tell the story of the etiology, the manifestations, and the cure of an outstanding dental disease. I cannot help hoping that I may live to see the day when this happy consummation shall be brought about, and I am even human enough to wish that the Editor would do me the favor of sending me advance information of the achievement so that I may be among the first to tender my felicitations to the fortunate research worker who has been successful in solving the problem.



C. N. JOHNSON
Editor of the Journal of the American
Dental Association.

No thrill in life is ever quite equal to that which sees the solution of a difficult problem in science, and the fortunate man is the one to whom it is given to see the light in advance of all the world. May we not hope that in the fruitful days to come *The Journal of The Canadian Dental Association* shall record many achievements of this kind, and thus take its place among the leaders of our professional periodicals.

My congratulations and heartiest good wishes go to the entire editorial staff, and to all of those who in any way are charged with the responsibility of bringing out the magazine. I shall watch for each issue with solicitous anticipation, and with the trustfulness born of complete confidence in the ability of the promoters to make a signal success of the enterprise.

MARKING AN EPOCH

By A. W. FAULKNER, D.D.S., F.A.C.D., Halifax, N. S.

AN epoch is defined as "a fixed or definite time; a date; especially one marked by significant events".

The introduction of *The Journal of the Canadian Dental Association* to the profession in Canada is an occurrence of arresting importance. It indicates the culmination of four years of preparatory work by a Committee of the House of Delegates made up originally of Dr. Philippe Hamel of Quebec, Dr. Fred J. Conboy of Toronto, with Dr. M. H. Garvin of Winnipeg, wisely guiding its fortunes as Chairman. The Committee was purposefully small in numbers for the sake of effectiveness. The individuals comprising it are well-known to the profession as men of exceptional ability, wide experience, eminent capacity for work, and who have at heart the best interests of the Canadian Dental Association. Dr. Conboy subsequently resigned, and was replaced by Dr. Stephen A. Moore of Ontario. My intention is not to particularize the tremendous amount of work that was performed cheerfully by the members, and the almost overwhelming responsibilities they were called on to shoulder, but rather to felicitate them today on the occasion of the production of the first number of the *Journal* which rewards their efforts.

A BACKWARD GLANCE

On an occasion such as this it is



A. W. FAULKNER

Associate Editor of the *Journal of the C. D. A.* of Nova Scotia and Past President of the C. D. A.

sometimes useful to cast a glance over the past in order to see the distance we have come and to observe the direction in which we are travelling. In professional development Canada has been indistinguishably blended with the United States. The first dental periodical on this continent, *The American Journal of Dental Science*, began publication in 1839. Although starting as a privately owned *Journal*, from what I can gather of its career, it was sponsored for a time by the American Society of Dental Surgeons, who found great difficulty in maintaining it. Indeed, owing to internal

discords and antagonisms, this first National organization of dentists was doomed to a premature death, surviving for barely sixteen years. The dental profession at this early date was making struggling efforts toward development. The Journal, the National organization, and the first dental college to be established in the world—the Baltimore College of Dental Surgery—all made their arrival within a year of one another. Charlatanism was exceedingly prevalent, as there were no effective state laws governing the practice of dentistry, and no extensive organization of the profession. Although times were discouraging for the successful promotion of a professional Journal, it was launched nevertheless, and despite a somewhat uphill life proved invaluable as a means of spreading new knowledge as well as a vehicle through which to further the organization and consolidation of the dental profession. On its first list of subscribers, numbering 348, was the name of a resident of New Brunswick, his being the only one from all of British America.

"THE FAMILY DENTIST"

Since the advent of the *American Journal of Dental Science*, there have appeared in North America many and varied dental periodicals exemplifying such diversified ownership as society, fraternity, college, trade-house, corporation, individual, etc. Of more immediate interest to Canadian readers, perhaps, are those which were published in Canada, the earliest of which was *The Family Dentist*, edited and published monthly by S. S. Blodgett,

of Brockville, Ontario. It made its first appearance in 1854, and is thus referred to by the *New York Dental Recorder* in June of that year, "As the first dental periodical we have seen, published by our neighbors over the border, we welcome it as the harbinger of a more correct and healthy public sentiment in matters pertaining to dental practice". It was apparently a short-lived effort in dental journalism.

The second dental publication produced in the Dominion was *The Journal of the Times*, published quarterly in Halifax, Nova Scotia, by Drs. Paine and Macallaster. It began its career in September, 1858, and ended it in June, 1860. While its initial intention was to advertise its publishers' business, it is said of it that their advertisements were not flagrantly unethical.

The next dental periodical in chronological order was the *Canada Journal of Dental Science*, which was begun in June, 1868, at Montreal. This was in reality the pioneer dental journal of Canada, and although its later issues were irregular, it persisted in its efforts until 1879, when it discontinued publication owing to the departure of its editor for Europe. The magazine was very ably conducted, its editorial matter being closely reasoned and timely. George William Beers directed its policies, with J. Stewart Scott, M.D., of Toronto, as associate.

DOMINION DENTAL JOURNAL

Following this came the *Dominion Dental Journal*, founded in 1889, with William George Beers, of Montreal, as editor-in-chief, and C. S. Chittendon, L.D.S. of Ontario, and A. C.

Cogswell, D.D.S., of Halifax, Nova Scotia, as assistant editors. Quoting from the History of the Dental Periodical Literature of the British Empire, 1843-1924, by William H. Trueman: "Although there was quite an interval between the close of the first and the advent of the second, the close relationship between the *Canada Journal of Dental Science* and the *Dominion Dental Journal*, warrants assuming the *Dominion Dental Journal* a new series of its predecessor. The same group of leaders who organized the dental profession in Canada, secured for it legal recognition and protection, established its first Journal, and laid the foundation of its educational institutions, were later prominent in founding the second Journal, which for so many years has been an important factor in the profession's progress and uplift." The *Dominion Dental Journal* was first published as a quarterly, continuing thus until the beginning of its third volume, thereafter being issued twice a month. Two years later, in 1893, it became a monthly publication and has remained as such continuously until replaced by the *Journal of the Canadian Dental Association*. Dr. A. E. Webster of Toronto, succeeded to its editorship upon Dr. Beers' death in 1900, and has guided its fortunes for the past thirty-four years. He becomes Honorary Editor of its successor.

In 1903 a periodical named *Hya Yaka*, published by the student body of the Royal College of Dental Surgeons of Ontario, came into being.

The year 1906 brought the establishment of a monthly Journal entitled

Dental Practice, published at Toronto with Dr. Robert J. Reade as editor. It eventually passed out of existence in consequence of its merging with a medical publication.

Asb's Canadian Monthly Circular first appeared in 1910, and ended as a quarterly in 1919.

Oral Health began distribution in January, 1911, and has continued as a monthly publication ever since, with Dr. Wallace Seccombe as Editor and proprietor.

Next came *Revue Dentaire Canadienne*, "the only French Dental Journal of America", published in Montreal and beginning, I think, in January, 1916, with Dr. H. Thibault as Editor. It is a current publication.

In 1925 the Ontario Dental Association initiated an official monthly periodical named *The Booster*, which is known now as *The Journal of the Ontario Dental Association*.

THE NEW EPOCH

The eleventh and latest dental periodical to be published in Canada, *The Journal of the Canadian Dental Association*, is unique in that it is the first to be sponsored by a Dominion wide dental organization. In building up and improving the organization of Canadian dentists; in guiding and directing the tremendous latent power that a compact and unified dental association must possess; in influencing the development of proper dental educational standards; in maintaining the independence, dignity, and ideals of the profession; in improving dentistry's contribution to the public welfare; in disseminating what is new

and interesting in contemporaneous dental literature; the new Journal is well supplied with philanthropic motives for a long and useful life.

The efficiency of the Canadian Dental Association in its relation to the profession depends on its vigilance, its unity, and its sagacious use of group influence. The inauguration of a purely professional dental journal will stimulate its alertness, develop its solidarity, and give to the Association that power which is synonymous with

co-operative effort. The publication of Number One, Volume One of *The Journal of the Canadian Dental Association* is a significant event. It marks an epoch.

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GREETINGS FROM THE MEDICAL PROFESSION

By J. S. McEACHERN, President, Canadian Medical Association.

RECOGNIZING the vital importance of the work of the Dental Surgeons in the field of Preventive and Curative Medicine in Canada, the Canadian Medical Association has watched with sympathetic interest, the organization and growth of the Canadian Dental Association.

It is essential that in the future there must be a closer co-operation between the dentist and the physician. The two national organizations can do much to foster that co-operation between the individual practitioners who compose their organizations. Much still remains to be done in the way of education of the doctor and the dentist in regard to those problems which lie partly in the field of each, and which

can be satisfactorily solved only by mutual co-operation and collaboration.

We of the Canadian Medical Association congratulate you on the great forward step which you have taken in undertaking the publication of a National Dental Journal.

It is our hope that this will aid in unifying your position as a great national body and in extending its usefulness in preserving the health of the Canadian people. We join with you in the hope that your Association may increase in strength and influence and that *The Journal of the Canadian Dental Association* will secure a permanent place among the scientific journals of the world.

"Many men owe the grandeur of their lives to their tremendous difficulties."—Spurgeon.

PREVENTIVE DENTISTRY—ITS POSSIBILITIES AND LIMITATIONS

By ARTHUR H. MERRITT, D.D.S., F.A.C.D., F.A.A.P., New York.

THE prevention of disease is the highest achievement of the healing art and should be the goal toward which all engaged in the treatment of disease should strive, even though in the effort, one falls far below complete success. Diseases which affect the human body may arbitrarily be divided into two groups: those which run their course and by treatment are cured, leaving behind them little or no appreciable evidence of their effect; and second: those which are attended by pathologic phenomena which may to a certain extent be irreparable, no matter what the treatment may be. It is this latter aspect of disease, that serves to give emphasis to the importance of preventive dentistry, for diseases which affect the teeth and their supporting tissues, may and frequently do, create conditions that no treatment, however skillful, can entirely remedy.

The pulpless tooth, for example, may by treatment, be rendered innoxious, though of this no one can be certain, but it still remains a pulpless tooth, which all the king's horses and all the king's men cannot restore to normality. The advanced case of periodontoclasia, with its accompanying alveolar resorption, may be cured in the sense of restoring the involved tissues to health, but no treatment will



ARTHUR H. MERRITT

completely undo the ravages of disease. The receded gingivae, the loose and weakened teeth, the exposed and sensitive root surfaces, the increased difficulty of maintaining mouth hygiene, all bear testimony to the limitations of treatment and serve to emphasize in a striking way, the far greater value of prevention. For these reasons, preventive dentistry takes on an added significance.

In our thinking and in daily practice, we too often confuse early treatment with prevention, and in many instances, because of our ignorance of all the factors which enter into the causation of disease, we are actually

unable to prevent it; early treatment and control is the most we can hope to accomplish. This is especially true in dental practice. It has been said that "dentistry is triumphant today in the art of mechanical repair, but is baffled before the mystery of the factors which lie beneath the dental disorder and which, duly understood, would prevent its occurrence". (1) As a matter of fact, dentistry has not been notable in the preventive field, and has not, simply because it has been baffled by the mysterious and unknown factors which underlie all dental disorders. Notwithstanding all the study and research that has been done to discover the causes of tooth decay and periodontoclasia we are still unable in many instances to prevent either.

DEFINITION OF PREVENTIVE DENTISTRY

Preventive dentistry may be defined as being the sum total of those measures which aim at the protection of the teeth and their supporting tissue against disease; first, by the employment of all local means designed to preserve the enamel and protect the gingivae against irritation and infection; and secondly, by controlling through diet, nutrition, sunlight, exercise, health, etc., those biologic factors which, as shown by recent researches, are in many instances the predisposing causes of dental diseases.

TWO GROUPS OF CAUSATIVE FACTORS.

It will be observed from this definition, that there are two groups of causative factors to be considered in any effort to make preventive den-

tistry anything more than a symbol; one is the local conditions, the other, the systemic. Unfortunately for all concerned, emphasis has been placed on the first, with the natural result that only a partial measure of success has attended our efforts at prevention, the reason being that we have attacked the problem from the wrong angle. To continue pouring more and more water into a bucket with the bottom out will never fill the bucket; the logical procedure would be to stop the leak by getting at the cause. It is necessary that these local factors receive attention, but they are of secondary importance in the preventive scheme; the sooner this is recognized, the sooner will we as a profession achieve our goal.

LOCAL MEASURES IN PREVENTIVE DENTISTRY

The local measures which have been employed by the dentist in his efforts to prevent disease within his field of activity may be enumerated as (a) periodic examinations, (b) establishment of normal occlusion, (c) mouth hygiene, (d) prophylactic odontotomy, (e) maintenance of normal tooth form, (f) gum stimulation and (g) function. No one will deny their importance for no program of prevention can be wholly successful which does not include them. The fault is not in giving attention to these local factors, but in the sequence in which this has been done, we have failed to do first things first.

Periodic examinations are of first importance in any attempt at prevention, for without such examinations,

there would be no way of knowing what the conditions were or what steps might be necessary to prevent the development of disease. As examinations are usually made, however, they are neither thorough enough nor comprehensive enough. Local conditions which predispose to disease, are frequently overlooked and little or no attention is given to those biologic factors which may profoundly influence the local conditions, and which should be given careful consideration.

All are agreed that *normal occlusion* is an important item in the prevention of dental diseases, making possible as it does, the normal function of the teeth and jaws without which health of these tissues cannot long be maintained. Orthodontia is an exceedingly important agency for the promotion of health and the prevention of all dental disorders, but until it is brought within the reach of rich and poor alike, it cannot achieve complete success in the part which it must play in the preventive program.

Mouth hygiene was born out of the conception that tooth decay is caused by mouth bacteria; hence the slogan, "clean teeth do not decay". There is an element of truth in this conception, for there can be no doubt, that other things being equal, the cleaner the mouth and teeth, the less liable are they to disease. The unfortunate thing about this theory is the fact that other things are *not equal*, and that forces mightier than those resident in the mouth, are, after all, the controlling forces. For this reason, teeth that are as clean as modern methods can make them, do decay, just as those which

receive no care may continue to be immune throughout life, clearly proving that dental caries is vastly more than a problem in mouth hygiene.

More recently, in an effort to reduce tooth decay to a minimum, the dentist has been advised to cut out and fill the fissures in teeth as soon as they erupt, and many dental organizations have gone on record as endorsing this expedient, notwithstanding the fact that these areas would not decay if the biologic factors involved in the process were understood and controlled. *Prophylactic odontotomy* may be the best we have to offer our patients in the light of our present knowledge or lack of knowledge, but its application to daily practice is the best proof that could be given, that as a profession, we are ignorant of the fundamental causes of dental caries. Such procedure may minimize and partially *control tooth decay*, but its widest application to practice will not *prevent tooth decay*. Instead of giving thought to the *primary* cause of tooth decay, attention has been focused upon its effect; to the practice of filling teeth, we simply advocate more fillings. Instead of stopping the leak in our bucket, we go on pouring in more water. This may be the best we have to offer, but it cannot be said to be a satisfactory solution to our problem.

The importance of maintaining *normal tooth form* in an effort to prevent dental diseases has been given a prominent place by the periodontist, and rightly so. Open contact points, and fillings which do not restore anatomical tooth forms are both local

factors in predisposing the teeth and periodontal tissues to disease and should receive consideration in our efforts at prevention.

In the prevention and treatment of periodontal diseases, the importance of an active circulation in promoting health of the supporting tissues of the teeth is well recognized, hence the value of *gum stimulation*, either artificially or through function. *Function* is, of course, the normal way in which to accomplish this, but there are so many factors which militate against the physiologic function of the teeth and jaws; such as malocclusion, lost teeth, soft foods, and the like, that it can hardly be depended upon to provide the stimulation necessary to promote a healthy circulation in these tissues.

These outline briefly the local measures which have been, and are being employed to prevent diseases of the teeth and periodontal tissues. They are important, but secondary; they do not attack the problem at its source. It is no figure of speech to say that the dental profession "stands baffled before the mystery of the factors which underlie these dental disorders" and which, duly understood, would actually prevent their development. It is impossible to achieve any large measure of success in prevention, as long as they remain unknown. Fortunately, researches into this phase of our problem are being made and already throw some light on the subject, and while far from conclusive, point the way in which we must go if we are ever to get at the solution of our problem. As a result of several years of research, including animal experimen-

tation and more recently a study of large groups of pre-school children among the mixed races of Hawaii, Dr. Martha Jones and her collaborators are on record as saying that "All of the evidence available indicates that dental decay is primarily a systemic disorder, an imbalance perhaps in the tissue fluids and oral secretions in the direction of a decrease in basic ions, either relative or absolute, resulting from varying intensities of those factors which regulate metabolism. It is believed that any type of diet, any factor or combination of factors which tend to *decrease the amount of base* (either absolute or relative) in the tissue fluids or oral secretions will proportionately *increase* the liability of enamel to decay." (2) .

Schultz (1) expresses the opinion "that the maintenance of the proper acid-base equilibrium of the animal organism is as essential to sound tooth-structure and development as it is to all other proper metabolic functions in the body.—The maintenance of this important equilibrium or metabolic balance directly influences another great function of the organism, the production and maintenance of antibodies and immune substances adequate to combat the constant threat of aggressive bacterial invasion." These observations indicate that when the acid-base balance is represented by excessive acidity, teeth will decay, no matter what local measures may be taken to prevent it. On the other hand, investigations have shown that when the acid-base equilibrium is disturbed by excessive alkalinity, skeletal changes and dental defects may be in-

duced such as are seen in the breaking down of the alveolar process in advanced periodontoclasia (2) (3) (4). In other words, dental caries is believed to be caused primarily by what might be called a mild acidosis; whereas periodontoclasia in certain cases at least, has as its underlying cause, a condition of alkalosis (7). This may explain why it is that tooth decay and periodontoclasia rarely, if ever, go on simultaneously in the same individual.

These things being true, the question which logically suggests itself is, how may they be brought under control in the prevention of dental disorders. And this brings us to a consideration of our second group of factors mentioned in the definition of preventive dentistry, namely attempting to control through diet, nutrition, endocrines, exercise, health, etc., those biologic factors which underlie all dental disorders.

BIOLOGIC FACTORS UNDERLYING DENTAL DISEASES

The first, and one of the most important of these, is diet, for it is primarily the factor which, if not interfered with, governs the acid-base balance of the body. It is known in a general way that when certain foods are metabolized in the body, such for example, as dairy products, vegetables and fresh fruits, they leave an alkaline ash, whereas certain other foods, notably carbohydrates and proteins, produce an acid reaction. For this reason, diet must be given first consideration in any effort to control the acid-base balance, which recent investigations have shown to be of fundamental im-

portance in the prevention of tooth decay and periodontoclasia.

PRENATAL DIET

Much has been said and written in recent years regarding the importance of prenatal diet in the development of sound, healthy teeth, the belief being that unless this be given attention, the child will be born with teeth that are more or less susceptible to disease which no amount of subsequent care can entirely correct. This is probably not altogether true. The fetus is in a sense a parasite, and takes what it requires for its nourishment if available without regard to the mother (5). The belief that fetal development can be appreciably influenced or retarded by food restriction within normal limits, may be said to be incompatible with present-day biologic knowledge. "The fertilized ovum is not a maternal body cell, necessarily subject to maternal metabolism, but an individual organism. The placenta is not merely a passive mechanical filter, but an organ endowed with an active vitalistic function, which promptly and reliably supplies the fetus with all the substances essential to its development, as long as they are available to the maternal organism." (6) On this point Adair says that "It is problematic whether or not the fetus suffers much from a calcium deficiency in the diet of the mother.— During intra-uterine fetal life, the fetus will, if necessary, develop and grow at the expense of its mother; but during extra-uterine life, the maternal organism will protect itself at the expense of the offspring. It is therefore important that we strive par-

ticularly to protect the maternal organism by proper diet during pregnancy and the offspring by proper maternal diet during lactation." (5).

Schultz goes on to say that "Experimental work of unquestionable accuracy has established the fact that for satisfactory bone formation, at least four factors must be adequately and effectively provided: calcium, phosphorus, calcifying vitamins and radiant energy. These are also the essential factors in good tooth structures. Its stability, its resistance or susceptibility to bacterial invasion during either its developmental or its mature stage, depend largely on these biochemical and physiochemical conditions." (1). It would seem, therefore, that normal calcium and phosphorus metabolism are of first importance in any effort at the prevention of dental disorders and that these necessary elements can best be supplied through proper foods. About this there will be no dispute on the part of anyone. But unfortunately, *nutrition* is more than a problem in dietetics. "The ingestion and even the digestion of food does not necessarily mean that these products enter into the physiologic processes of the organism." (5).

There can be little doubt, too, that the endocrine glands exercise a definite regulatory influence over calcium and phosphorus metabolism and may, under certain conditions, render ineffective any diet no matter how well balanced it may be. (3).

Activity and *sunlight* are also factors which modify the acid-base equilibrium of the body by increasing acidity. (2). The fact that the child who

is more active than the adult and more frequently exposed to the direct rays of the sun, increases thereby the body acids, doubtless explains in part why it is that children are more susceptible to tooth decay than are adults.

Ill health is still another factor influencing the nutrition of the body, which may nullify all efforts designed to promote calcium metabolism and prevent tooth decay through diet. And since this may not be at all obvious, and is a problem which falls within the province of the physician, it naturally follows that as a rule he is better qualified than is the dentist to regulate the patient's diet with a view to preventing dental diseases. Generally speaking, until the education of the dentist is more comprehensive than it has been in the past, the regulation of the patient's diet, even for the prevention of dental diseases, should be undertaken, in co-operation with the physician. This is unfortunate, but at present it is necessary.

From the foregoing brief survey of the situation as it applies to preventive dentistry, two things at least are apparent:

First, that no great measure of success can ever be expected to attend our efforts at the prevention of dental disorders as long as reliance is placed upon purely local measures such as those now generally employed. By these we may *control*, but *cannot prevent disease*, simply because the primary causative factors are systemic, not local. We as a profession, must learn to realize that back of most and possibly all dental diseases there is some metabolic disturbance that acts as a

predisposing factor in their development. As long as we continue to think in terms of restorative dentistry, and that the control of dental caries, for example, is simply a problem in mechanics, no great progress toward prevention is possible.

And secondly, as we survey the situation, and realize even in part how far flung are the causes and effects of these common dental disorders, one cannot fail to be impressed with the tremendous responsibilities which rest upon the dentist if he is to meet and solve the problems which it is clearly his duty to do. And as he further reflects upon the complexity of these problems, involving as they do the science of dietetics, nutrition, endocrinology, etc., he will realize as he may never have done before, the incapacity of the dental profession to completely measure up to the responsibilities which the public has rightly placed upon him.

If anything were needed to prove the inadequacy of our dental educational system in the past to fit the dentist for his life's work, that proof is to be found in his failure to meet in a satisfactory manner the most pressing problem of daily practice, namely, the

control and prevention of dental diseases. And until the dental profession is qualified by education and experience to do this, it can never, with credit to itself or satisfaction to the public, completely take its place as an important factor in the promotion of health service.

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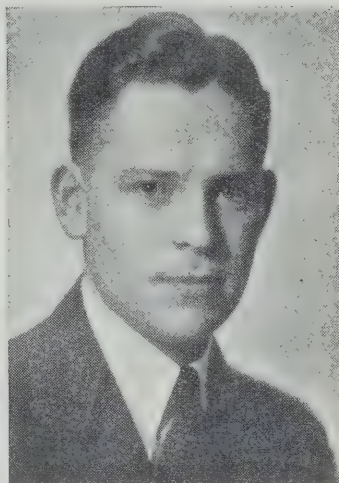
"Unless the tissues which support the teeth are maintained in health, all else in dentistry is like a house built upon the sands; it cannot endure."

RADIOGRAPHY IN DENTISTRY

By JAMES COUPLAND, D.D.S., Ottawa, Canada.

IN THE early stages of development radiography was employed in dentistry to disclose areas of bone rarefaction at the apices of septic teeth. At that time imperfections in the techniques limited its usefulness to the discovery of gross pathological lesions. Thus the idea arose that an X-ray examination served no other purpose than that to which it was first applied. This fallacious belief is held generally by the public, frequently by physicians, and occasionally by dentists. This misconception has seriously retarded radiodontia's potentialities. Refinements in the technical procedures and a broader knowledge of interpretation have opened up a field of usefulness of increasing and apparently infinite magnitude.

While the discovery of unhealthy periapical conditions is one of the most valuable applications of radiography to the practice of dentistry it is by no means the only one. The X-ray when properly used is the most important instrument at the disposal of the dental profession for meeting the popular demand for preventive health services. It provides a means of detecting the incipient lesions of oral disease. The dentist is given thereby an opportunity to institute corrective treatment at a time when the prognosis



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is favorable and before irreparable damage is done. This is particularly true in relation to the most popularly known oral lesion, dental caries. A periodic X-ray examination reveals incipient decalcification occurring in proximal surfaces that cannot be investigated clinically as well as advanced cavities of an obscure nature and the recurrent caries that frequently develops under restorations. The information obtained in this connection is, in the writer's opinion, sufficiently valuable to justify the acceptance of a periodic X-ray examination as a routine procedure.

Thus radiography makes a very real contribution to the principle of pulp

* Read at the Fall Clinic of the Montreal Dental Club, October, 1934.

conservation. This policy seems to be the only satisfactory means by which we can eliminate the menace of the pulpless tooth. There has been a very noticeable trend in the dental profession toward this principle of pulp conservation. The decreasing number of root canal operations that are performed is evidence of that fact.

RETAINING INFECTED PULPS

However, like every good principle, it may be carried to an illogical extreme. This ultra-conservatism has resulted in the retention of many pulps after they have been infected. Simpson¹ has called attention to the danger of this practice. He points out that such septic pulps have direct circulatory connections and consequently that they may be more virulent foci of infection than devitalized teeth of long standing. These degenerating pulps usually can be detected only by means of an X-ray survey because often the teeth respond normally to vitality tests. The radiographic evidence denoting their presence is a slight increase in radiolucence at the apex of the root or a break in the lamina dura. These changes are so minute that they may easily be obscured by technical deficiencies in the radiographs.

That periodontal as well as periapical sepsis may cause systemic disease must be recognized. Recent publications of qualified authorities like Box², Gardner³, Merritt⁴, Fixott⁵ and others emphasize that fact. Without exception these contributors stress the value of the radiographic findings. In the detection and treatment of periodontitis the X-ray is indispensable. It

discloses many of the etiological factors such as deposits of calculus, faulty contacts, overhanging fillings and trauma. Frequently periodontal pockets are found that would have been overlooked in the clinical examination. In advanced cases of periodontoclasia the X-ray evidence is the most dependable index in determining whether the prognosis under treatment is favorable or whether immediate extraction is indicated.

PERIODIC EXAMINATION

In his crusade against cancer, Bloodgood⁶ on the public platform and in his written articles stresses the grave responsibility of the dental profession in prevention of malignancy of the mouth by detection of the predisposing lesions. He regards a periodic radiographic examination an indispensable adjunct to an adequate oral survey.

The requirements of a thorough examination are very exacting. Primarily the radiographs must possess a high degree of technical excellence. Then great care and judgment must be exercised in interpreting them. Any deviation from the normal should be noted and a differentiation must be made between evidence of physiological processes and manifestations of pathological involvements. In a recent work Simpson⁷ has comprehensively described and splendidly illustrated the normal conditions and the variations encountered in dental radiography.

When searching for oral foci of infection the edentulous spaces should be investigated radiographically. As the result of an extensive survey made at

the Mayo Clinic, Gardner⁸ reports that 33 1/3 per cent. of the edentulous mouths examined contained retained root fragments. Haden⁹ has established that these fragments not uncommonly are associated with residual infection. Haden and Mead¹⁰ have called attention to the frequent occurrence of residual infection where no fragments of tooth remain. These facts demonstrate conclusively the necessity of including the spaces from which teeth have been removed in the X-ray examination.

RADIOGRAPHY AND SURGERY

The intimate relationship between radiography and surgery need not be discussed at length. Winter¹¹, Mead¹², Cogswell¹³ and other authorities in exodontia have placed proper emphasis on the importance of accurate radiographic records.

Only a few of the many advantages of a periodic radiodontic examination have been enumerated. They in themselves are sufficiently important to justify a more general acceptance of the service than prevails at the present time. Unfortunately many dentists who do recognize the advisability of employing the X-ray are not sufficiently critical of the results they obtain and accept inferior pictures. Frequently a presumable diagnosis is made on evidence that may be worse than useless. This practice is responsible for the doubt that has arisen in the minds of some patients as to the dependability of radiography in disclosing oral disease.

As well as a consciousness of the place of radiography in dentistry we must realize that the technical quality of the radiographs determines their value in diagnosis. Radiography's greatest usefulness will not be achieved until our profession realizes that it demands the same fastidious attention to detail that is a requisite to the best results in other departments of dentistry.

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THE FUNCTION OF ARTIFICIAL DENTURES AND MAIN ANATOMICAL PARTS OF DENTURE SPACE

By FELIX A. FRENCH, D.D.S., Ottawa.

NOTE:—The writer acknowledges a debt to the late Rudolph Hanau for much that is contained herein. From numerous discussions with him as well as from his unpublished writings many valuable references to this subject have been gathered some of which are incorporated here just as expressed by that master mind.

NOT so many years ago we were urged to believe that many intricate dental problems might be solved by the application of near-magic materials, automatic instruments and shrewd salesmanship.

Experience plus observation forces the conclusion that all full denture prosthesis is not the mere product of an artisan in which his manual dexterity, precision instruments and good materials are the only decisive factors.

A restoration becomes the Acme of Dental Art only:

- 1.—If it feels comfortable in the mouth where it must comply with physiological requirements.
- 2.—If it conforms to Esthetics, by which we mean that the denture and the rearranged tissues must "look right".
- 3.—If it functions satisfactorily in mastication and speech.

Thus a denture has many functions. Within the denture space and bordering it we have the Lips, the Cheeks, the Teeth, the Ridges, the Tongue, the Vault, the floor of the mouth and a great number of tissue elements of secondary functional interest.

THE LIPS

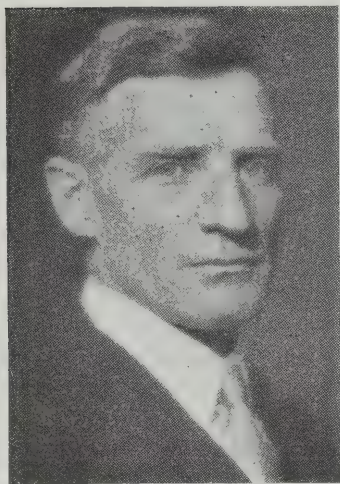
The lips are controlled by a complicated assembly of muscles in the performance of their varied function as parts of the apparatus of mastication, speech and breathing. Their size and shape have to be considered from the viewpoint of esthetics.

In mastication their function is manifold. They act as an avant-guard against injurious food forms and temperatures. They open and shut off the oral cavity in bivalve fashion and assist in sucking, apprehending, shifting and swallowing food.

Lip action in speech presents a delicate and complicated function. The lips are the most conspicuous soft tissues of the oral cavity and for that reason important in considering esthetic requirements. The relative dimensions of the lip tissues give the face an expression which often reveals race, character and emotion of the owner. Malpositioned and malposed lips are deformities embarrassing to the owner and a source of difficulties in denture restoration. Frequently they can be transposed to a more normal position by the full denture prosthesis.

THE CHEEKS

The cheeks form the lateral, soft and movable walls of the mouth, and



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embed many muscles, some of prime importance in the physical function of mastication and speech. Glands and organs for secretion, essential to predigestion, are located in the cheek tissues.

The cheeks aid in holding and shifting a bolus of food during mastication and when taking liquids act like walls of bellows.

In speech their function is not as apparent as that of the lips; they serve as variable walls of a resonance chamber, constantly changing its volume during jaw movements; they also form the flexible walls of a temporary air compression chamber very evident in the enunciation of explosive sounds.

Being soft tissues throughout, the cheeks are subject to undue displacement, elongation and collapse. What this means to appearance is readily visualized.

THE RIDGES

The exposed ridge areas present the

connecting areas merging the maxillary tooth crowns with the vault, cheeks and lips; in similar manner they bridge the distance between mandibular teeth and the floor of the mouth, cheeks and lips. In neither case do they assume an independent prominent role.

The heights and dimensions of edentulous ridges are very important factors in full denture restorations.

The ridges serve as foundation for the prosthesis and are superseded by these.

Form and size of artificial structure have to be very carefully planned and constructed to conform to proper denture and tongue space requirements.

THE TONGUE

The tongue is capable of performing physiological and physical functions with uncanny precision and celerity.

It is the receiver terminal of the sense of taste and in this capacity alone it performs miraculous tasks. Its delicate tactile sense and temperature discrimination are a guard against injurious food forms and temperatures.

As a mechanical tool of mastication, it parcels, packs and rolls food and distributes it to the masticatory surfaces, and finally aids in swallowing. The tongue labors very vigorously in sucking liquids.

In normal breathing, it rests on the floor of the mouth and should gently close off the oral cavity at the termination of the hard palate. The tongue is the most generally acknowledged instrument of speech, because the most evident. Tongue-tied is equiv-

alent to speechless. Tongue and lips are co-acting parts in speech. However, it is possible to produce articulate sounds with much restricted tongue action and near elimination of lip action (ventriloquy).

THE TEETH

Much can be said about the physical role and function of the teeth. The color, size, form and arrangement of the anterior teeth, which are visible, greatly influence aesthetics. Their form and position influence phonetics. The posterior teeth, less conspicuous, have to do chiefly with mastication. Their form and arrangement are also vitally important.

THE VAULT

The hard palate is that part of the mouth which terminates the tongue space above. The size, form and relation of the vault to the tongue, influences tongue function and acoustics.

THE FLOOR OF THE MOUTH

The root and the tongue tissues occupy most of the floor; connecting tissues and muscles radiating to and connecting with the structure of the mandible are considered part of the floor of the mouth.

Particular attention is given to the movable tissues in forming the borders of the lingual flanges of the denture base.

In the performance of their various functions these anatomical parts of the denture space co-act with each other as well as with the dentures.

Artificial dentures approach the acme of dental art just in proportion as they are so formed to function har-

moniously with the adjacent anatomical parts.

They should not interfere with the physiological function of the supporting tissues and should comply with the requirements of Aesthetics, Phonetics and Mastication (mechanical).

Aesthetics—implies position of the teeth in relation to the lips.

Phonetics—position of the teeth in relation to tongue and lips.

Mastication (mechanical)—position of teeth in relation to the supporting ridges.

As a rule these factors harmonize as regards tooth position. Where they clash we must compromise in the most favorable direction.

Aesthetic requirements are flexible requirements; there may be many arrangements of teeth that will look good in the same mouth.

Phonetic requirements are also flexible requirements; inasmuch as the tongue is a very versatile member which readily accommodates itself to new conditions providing they are not too radical.

Mastication (mechanical) requirements are inflexible; the teeth are either set in right or wrong position.

The requirements of aesthetics and phonetics offer some leeway but those of mastication present very little.

Artificial dentures are purely mechanical machines and the fact that they function in an anatomic environment does not remove the necessity for complying with physical laws of sound mechanics.

One decided step forward will be registered in the progress of denture prosthesis the moment we are agreed

that, in mastication, Anatomic Function and Prosthetic Function differ; that the physical laws governing the behavior of natural teeth operate in an entirely different manner upon prosthetic restorations.

The differences that exist are due primarily to the two different methods of retention.

Natural teeth, firmly embedded in bony sockets, resist stresses from all directions. Each tooth bears its own load. They are not easily dislodged or subject to tilting or skidding. Chewing on one side of the mouth has no disturbing influence upon the teeth of the other side.

Artificial dentures function in an entirely different manner. A whole set of 14 teeth is attached to a denture base which merely rests upon the surface of the mucosa in such a manner that the whole structure may be easily dislodged. It remains stable under masticatory stress only when the forces are exerted in the most favorable direction. Resting as it does upon tissues which are both resilient and subject to displacement, lateral stresses not only tend to dislodge the denture but injure the supporting tissues.

Bicuspid and molars of anatomic form fail in many respects to meet the mechanical requirements of artificial dentures.

1. They cannot be set to direct masticatory stress in the most favourable direction without crowding the tongue.

2. Their intercusping occlusal forms tend to create unfavourable lateral stresses which the supporting tissues do not successfully tolerate, and which

unseat the dentures.

3. Normal settling of dentures so disturbs the occlusion as to still further create unfavourable stresses and torques.

The accumulated clinical evidence of the last two decades as regards instability, tilting, soreness, tissue atrophy, ridge destruction and continuous rebasing should, ere this, have directed our attention to the fact that there was something radically wrong with our procedures.

Nature designed our molars and bicuspid to function under given conditions. She is the Master of adapting Form to Function.

In the case of artificial dentures these conditions no longer exist.

Since prosthetic restorations function under entirely different conditions we must modify tooth forms, where necessary, to meet the new conditions and comply with physical laws as they operate on prosthetic restorations; by doing so we are not conflicting with nature but simply following her own plan.

Posterior teeth on Artificial Dentures should possess the following characteristics:

- 1—They should resemble the natural in as far as function will permit.

- 2—Uppers and lowers should bear a definite relation to each other.

- 3—They must be easy running and should not lock or trip.

- 4—They must be so formed that balanced occlusions can be easily obtained.

- 5—They must be efficient in function.

6—They should allow for normal settling of dentures without seriously disturbing articulation.

7—They must meet mechanical requirements, that is, they must function according to sound mechanical laws.

We have been so long accustomed to the use of anatomic forms and so often urged to believe that they were the solution to our problem that it is hard to change even in the face of the strongest evidence to the contrary.

Grinding teeth by hand to meet the requirements of prosthetic dentures is a slow and tedious operation, but, thanks to the vision and courage of certain manufacturers, we now have at our disposal and ready to use, tooth forms that meet above specifications.

Theoretically, there exists only one physical solution for each denture problem, if all factors governing denture forms are congruent. The only

handicap for the application of this truth is that we were never able to predetermine whether the factors present, those accepted in the mouth and those ready for assembly on the work bench are congruent.

It is fortunate that we are not limited to purely anatomic forms for the formation of the masticatory surfaces and that other solutions are possible; otherwise, we would have great difficulty in accommodating Aesthetic, Phonetic, Mastication, and Physiological requirements.

This broader concept of adapting prosthetic restorations to their anatomic environment, co-ordinating the various functions, the consideration of flexible and inflexible factors, the wonderful unlimited variation and the hidden possibilities are what make denture construction and restoration a science of such fascinating interest.

A RETROSPECTION

By A. E. WEBSTER, M.D., D.D.S.

CANADIANS have a genius for organization as is well exemplified in Canadian Commerce, Church and State.

Every organization begins by having its literature published by private concerns. So it has been in Dentistry. As time went on there was a growing desire by the profession that it should develop its own literature, hence it is quite logical that the profession should take the full responsibilities of a growing organization.

This situation culminated in the Canadian Dental Association establishing its own means of communication with its membership.

Having watched the trend of dental laws, dental education and dental literature for more than forty years, I may be excused for expressing my opinions. Canadian Dentistry, in my opinion, made a distinct step forward in establishing a dental publication under its own control. It will bring not only Dentistry but the whole country to the attention of the world.

Canadian Dentistry has much to spread before the nations and has a staff of editors who are qualified to take hold of such a project. I wish to express to the profession my good will and concurrence in the undertaking.

CANADIAN CENTRAL BANK

By JOHN W. CLAY, Calgary.

AT a recent meeting of the Calgary Dental Society, Doctor G. D. Stanley, M.P., addressed the members on the subject, "The Bank of Canada". A synopsis of his remarks may be of interest.

The Act which incorporated The Bank of Canada, was framed largely from the recommendations of the Macmillan Commission. The Canadian Government, in common with all other important nations committed itself, at the World's Economic Conference in 1932, to the opening of a Central Bank. The post-war world demanded such action on the part of the nations. There were many people who supposed that a great relaxation of credit would follow immediately on the opening of the Bank. This idea was erroneous, for the results were bound to be gradual.

A Central Bank is a Bankers' Bank, and in no way is a competitor to the commercial banks. Its chief functions are four-fold as follows:

(1) To act as a Regulator or Controller of the volume of credit and currency.

(2) To act as a Regulator in connection with Foreign Exchange by keeping our currency as near par as possible.

(3) To act as the financial advisor of Federal and Provincial Governments.

(4) To act as Fiscal agents for such Governments, particularly in the flotation of Bond issues.

To assist in the performance of its primary function, the gold reserves of Canada will be concentrated in the hands of the Bank of Canada, and it will ultimately possess the sole right of note issue in Canada. Further, its control over the rediscounting of securities, with the chartered banks, is the means whereby it is hoped to affect stability in price levels, volume of trade, industrial production and employment. In times of booms and wild speculation the Central Bank may raise its discount rate to such proportions that it would be unprofitable for commercial banks to sell securities for currency; and vice versa, in times of depression it may lower its discount rates to such proportions that it would become profitable for banks to sell their securities for currency. The Central Bank would also use moral suasion with the commercial banks, or if necessary actually go into the open market and sell or buy securities as conditions of credit demand.

It is also hoped that a sense of international responsibility may seize the world so that the various Central Banks of the world will agree to co-operate with some show of international sanity.

The Bank of Canada is privately

owned but sufficiently publicly controlled to make it safe from the manipulation of politics on the one hand or the domination of banking interests on the other. Two illustrations of the dangers of Government ownership were given. For instance, if a Government, which had the administration of a Central Bank in its hands, was due to appeal to the country in the midst of a wild orgy of speculation such as in 1929, what would it likely do, having in mind that Governments are usually composed of ordinary human beings? Would it have its Central Bank restrict credit and blockade the stream of money according to the demands of the situation, or would it be disposed to keep everyone happy and let the revelry continue until the elections were over? Again, if conditions of industry demanded a high discount rate or high interest rate, and the Minister of Finance had a huge financing issue to put across, would not the Government be liable to keep the rate low until the Finance Minister had accomplished his purpose? Such compromises would defeat the primary purpose of the Central Bank.

Many of the speeches heard on the political hustings during recent months emphasize the contention that politics could not be eliminated from a publicly owned Central Bank. The political directorates of the C.N.R. in years

gone by is an example. Besides, the experience of other countries is surely worthy of consideration.

Latvia, Russia, Bulgaria, Sweden and Australia maintain the only wholly public-owned Central Banks in the world.

On the other hand the dangers of private ownership have been overcome in the case of the Bank of Canada. No bank, banker, or employee of a bank may hold shares of The Bank of Canada either directly or indirectly. A maximum of fifty shares is set for any individual. There were about sixteen thousand shareholders. Proxies may only be used through the Minister of Finance. A maximum of four and one-half per cent. per year is to be paid to the shareholders, and all excess profits paid into the public Treasury. Thus the profit-making impulse is removed. All by-laws of the Bank are to be subjected to the Governor-General in Council for approval. The Deputy Minister of Finance will sit on the Board of Directors, which will be representative of various sections of industry, its members being elected on a rotation basis.

Following a question period Doctor Stanley was accorded a unanimous vote of thanks for his lucid and careful explanation of this important new legislation, with its dual or balanced control system of management.

*"Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time."*

—Longfellow.

THE JOURNAL AND ITS FRIENDS

STEPHEN A. MOORE, D.D.S.

Business Manager.

WITH our present financial support to the Canadian Dental Association, the publication of this Journal would be impossible without the assistance of the firms whose advertising appears on its pages. We feel particularly grateful to these firms for their splendid co-operation.

Our advertising friends have told us repeatedly that an official organ of the Canadian Dental Association was inevitable. To this they have added that they welcome it because of the splendid work it can do for the profession and for them. And to this, again, they have added their faith in us—though up to this moment they have had no actual evidence other than the spoken word to warrant that faith—by pledging their support in using the Journal's advertising pages. To us, this means a challenge, a challenge to do our part so worthily that all of us may benefit in the task to which we have set our hearts and minds.

We greatly appreciate this confidence, and trust that our appreciation may find expression in active co-operation in the solution of problems in which we are both vitally interested.

To the members of the Canadian Dental Association, to whom this Journal, we hope, may be a constant source of information and help, we suggest a careful perusal of its advertising pages. Reputable firms from many parts of Canada and the United States



STEPHEN A. MOORE

Business Manager of the Journal of
the C. D. A.

are represented in the Journal. Behind the messages which they convey to you are, perhaps, many years of research, experimentation, experience, and industry. Their laboratories have taught them many things and their messages to you are the result of these years of intensive study. Any man who speaks to us from the experience of years is worth listening to. We may not agree with his conclusions, but he is entitled to a respectful hearing at all times.

For all of our friends, we bespeak such a respectful hearing. Advertising is information, news; and we urge that the advertising pages of the Journal be an intimate part of its service and value to you as a reader and a practitioner.

WHITHER DENTISTRY

By D. P. MOWRY, D.D.S., Montreal.



D. P. MOWRY

WHENEVER I hear the term, "practical dental problem", I expect to hear of amalgam, inlays, cavity preparation, artificial dentures or some mechanical aspect of the dental scene. This would appear to be nearly always the case.

Yet, I propose to the dental profession that the most practical dental problem of the day is one of which little is generally known, namely the phenomenon known as Inflammation.

No dentist with an intimate knowledge of the picture presented by the oral tissues in a state of health, can fail to recognize that phase of tissue reaction known as gingivitis. Yet I venture to suggest that in no procedure do we so nearly approach neglect as when we permit our patients to leave

our offices with infection in the gingival crevice.

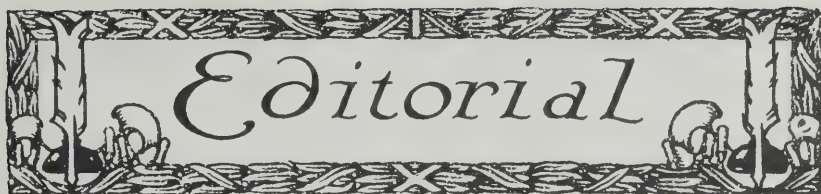
The public today is being educated by oral health propagandists and rightly so. They are being educated in what to expect when they pay for a prophylactic treatment. If, tomorrow, this public demand State Dentistry, one of the factors in this attitude may be that we have professed more than we have practised.

To realize our true position in society as a profession, the public must be able to see and feel by actual experience that we know our TISSUES.

A knowledge of cell and tissue reaction in the various phases of inflammation from etiology, through reaction and restoration to normal is fundamental. This is true whether it be gingival tissues, pulp, oral mucosa or bone.

Let us consult our text-books, let us go back to our dental schools for refresher courses, let us read our journals and above all, let us cultivate the ideal that the dental health of the patient is our chief interest. If we would serve, however, we must know.

We do not wish to see dentistry degenerate into a craft in which craftiness develops from competition in mechanical devices but rather do we look forward to an increasing public appreciation of our position in the economy of civilization wherein we are distinguished for our knowledge, skill and kindliness.



Editorial

Editor—M. H. GARVIN, Winnipeg.

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ALBERTA	John Clay, 901 Southam Bldg., Calgary
BRITISH COLUMBIA	J. S. Bricker, 1513 Medical-Dental Bldg., Vancouver, B.C.

THE DENTAL LIBRARY

At this time we have an important message for the senior students in our Colleges, and particularly for the younger men in our profession, although it affects every dentist practising in Canada.

This is the first number of the first volume of the official Journal of the Canadian Dental Association, and we believe that as the years pass this publication will grow in interest and influence throughout our vast country.

We would urge, therefore, every dentist to keep each copy of the Journal as it arrives, whether he reads it at the time or not, in order to preserve intact a complete file of Journals. We suggest further, that from time to time these Journals be bound, with the idea of building up a dental library, an asset which every man should possess. At present a few men have complete files of some of the leading dental journals of the world, even as far back as seventy-five or more years, but such forethought upon the part of the men of our profession is very rare.

King Solomon said: "Take fast hold of instruction; let her not go; keep her, for she is thy life." Gibbon states that he would not exchange his love of reading for the treasures of India. Emerson's book on nature affected Tyndall's whole career, and according to John Sharp, Shakespeare and the Bible made him Archbishop of York; and so we might continue with other quotations.

How many dentists are there today who, on account of present conditions, think they have "no chance"? And yet, if they would but study our Journals, they would get some suggestion, some idea that would start them off at a new tangent, with the grit that Beethoven exhibited when he would quote his favorite maxim: "The barriers are not erected which can say to aspiring talent, 'Thus far and no farther'."

"The secret of success in life," said Disraeli, "is for a man to be ready for his opportunity when it comes." How can a man be prepared to seize any opportunity who does not prepare for it by delving into the literature that is now made so easily available? There are some things that can never be recalled, such as the spoken word, the past life, and the neglected opportunity; so we would recommend—yes, we have no hesitation in urging—every dentist to build up a substantial dental library, and start now to file carefully the official Journal of the Canadian Dental Association, thus making it the nucleus of a library that some day will have a substantial monetary value in addition to the pleasure that such an achievement will offer.

"Happy is the man that findeth wisdom, and the man that
getteth understanding:

For the merchandise of it is better than the merchandise of
silver,

And the gain thereof, than fine gold.

She is more precious than rubies:

And all the things thou canst desire are not to be compared
unto her."

ORTHODONTIA FOR THE GENERAL PRACTITIONER

A Post-Graduate Course in Orthodontia for the General Practitioner will be held in the Faculty of Dentistry, University of Toronto for two weeks, from February 18th to March 2nd, 1935.

This course is not intended to train a practitioner for specialization but rather to enable him to render better service to patients who are desirous of having the family dentist furnish some degree of Orthodontic treatment.

The course will be under the direction of Charles A. Corrigan, D.D.S., C. Angus Kennedy, D.D.S., and S. Stuart Crouch, D.D.S. A few lectures will also be given by Faculty members on correlated subjects.

The class will be limited to about ten practitioners, and the fee will be \$50.00 for each registrant.

Upon acceptance, candidates will receive a list of instruments, materials and books required.

Correspondence should be addressed to:

Wallace Seccombe, Dean,
Faculty of Dentistry,
230 College Street,
Toronto, Ontario.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

The Annual Meeting and Fall Clinic of the British Columbia Dental Association was held in Vancouver, Thursday, November 8th.

The entire day was given over to practical demonstrations and Table Clinics. Our guest clinicians were Dr. David T. Chase, Professor of Prosthetics of the North Pacific College, Portland, Ore., who gave a practical demonstration on full and partial dentures, stressing the importance of impression taking, set up and rebasing; and Dr. John Ryan, Mount Vernon, Washington, who ably presented a simplified practical Inlay Technique, accompanied with motion pictures. This clinic was presented at the last American Dental Association meeting.

Following the dinner, Dr. H. M. Cassidy, Director of Social Welfare in the Province of British Columbia, spoke on State Health Insurance. His presentation was ably delivered, but from a dental standpoint, the profession was not given sufficient facts for them to come to a satisfactory conclusion of its benefits to all concerned.

The motion picture, by Dr. O. A. Anderson, Seattle, Washington, on "The Application of the Rubber Dam" was favorably received. The enthusiasm it received at the American Dental Association meeting is sufficient proof that all societies should see this detailed picture.

The high lights of the business meeting were: (1) The approval of the Canadian Dental Association, editing a National Dental Magazine, with an increase of our provincial grant, for paid up members. (2) The report of progress regarding Dental Clinics for indigent children was submitted by Secretary Dr. Harold Cline. Since last meeting, Clinics were held in two centres and communications were entered into with nine others, with the view of establishing Clinics, among these the Peace River district. This work is made

possible by the fund created by the Department of Health of the Province of British Columbia, the Canadian Hygiene Council and the British Columbia Dental Association. (3) Our Association would be pleased to join the Western Dental Association, for a meeting in 1936, instead of 1935, due the Pacific Coast Dental Conference at Long Beach, California, July 8-12. (4) Dr. R. L. Pallen's report on the Canadian Dental Association and his re-appointment as our representative to that body.

The following officers were elected for 1935: President, Dr. E. Fraser Allen, Vancouver; president-elect, Dr. Harold Cline, Vancouver; secretary, Dr. D. Hugh Munroe, Vancouver; treasurer, Dr. R. L. Pallen, Vancouver. Board of Censors—Dr. J. Allan Fraser, Victoria; Dr. Ralph Hall, Vancouver, and Dr. J. Gansner, Nelson.

A vote of thanks was extended to the retiring president, Dr. J. Frank Hill, and his executive for their able work and a successful meeting.

According to the Victoria Times of November 12th, the Hon. G. M. Weir, provincial secretary, is preparing a measure for the Legislature, involving a health insurance scheme, the limitation being the earning capacity of the insured person. Actuaries are now working on figures supplied by the hospital authorities and provincial health experts to devise a system which will be basically sound and give a fair measure of benefits.

ONTARIO

At present there are six Australian dental graduates in the Faculty of Dentistry, University of Toronto, seeking their doctor's degree.

The Brockville Rotary Club is sponsoring, in co-operation with the provincial health department, the establishment of a dental clinic, which will minister to the requirements of children in the public and

separate schools of the town whose parents are unable to bear the expense of necessary treatment. The Club will bear not only the expense of equipping the clinic, but will contribute largely toward the cost of operation.

Last November Colonel Walter G. Thompson, of Hamilton, was appointed director of dental services for the Province of Ontario.

A dental clinic has been established at the General Hospital at Kingston, with Dr. J. H. C. Gowland in charge.

The Free Press of London, Ontario, stated on November 3rd that \$300,000,000 is spent yearly in Canada for medical treatment and only \$6,000,000 to prevent the necessity of such a huge outlay. It states that the total loss per year is 21,000,000 working days, of which at least fifty per cent. is preventable. The conclusion is that health is so valuable a national asset that its preservation is warranted at almost any cost, that there is no investment which brings returns comparable to an investment in health. An optimistic note is sounded in the announcement that health is to be one of the subjects for discussion at the next Dominion-Provincial Conference.

QUEBEC

We extend our congratulations to Dr. A. L. Walsh, acting Dean of the Dental Faculty of McGill University, on his election, as an associate fellow of the American Society of Dental Science, as a member of the International and Spanish Speaking Association of Physicians, Dentists, and Pharmacists, and to the presidency of the Rotary Club of Montreal.

The realization of the need for a broader educational background is strikingly shown by the activities of the 1934 graduates of McGill University. Of eleven graduates eight have taken Internships and five have a B.A. or B.Sc. degree: Dr. R. Ward, Interne, Children's Memorial Hospital, Montreal; Dr. S. Cripps, B.A., Interne, Royal Victoria Hospital, Montreal; Dr. H.

Harris, Interne, Montreal General Hospital, Montreal; Dr. S. Klein, B.A., Interne, Manhattan General Hospital, New York; Dr. E. Walsh, B.Sc., Interne, Bellevue Hospital, New York; Dr. J. Reitman, B.A., Interne, Forsyth Clinic, Boston; Dr. N. Galkin and Dr. Dora Gordon, Internes, Guggenheim Foundation, New York.

Dr. Guelph Armitage has been elected president of the Quebec College of Dental Surgeons.

On September 14th thirty members of the Montreal Dental Club motored one hundred miles to Sherbrooke for a meeting with dentists of the Sherbrooke district. Dr. Fred Bradley, mayor of Sherbrooke, and a non-resident member of the club, was host. Dr. A. L. Walsh and Dr. R. Rochon gave papers on "Problems in Oral Surgery"; and "Preventive Dentistry" (in French) with lantern slides. The following members gave Table Clinics: Dr. W. C. Bushell, "Crown and Bridge Techniques"; Dr. R. B. Bell, "Mouth Reconstruction with Removable Appliances"; Dr. M. L. Donigan, "Orthodontia for the General Practitioner" and a motion picture of a technique for impression taking; Dr. I. K. Lowry, "Immediate Denture Service"; Dr. D. P. Mowry, "Treatment of Periodontia"; Dr. F. W. Saunders, "Exodontia and X-ray Diagnosis"; Dr. C. R. Seller, "Direct Inlay Impressions".

Saturday, September 15th, was devoted to golf at the Sherbrooke Country Club. Dr. R. McMahon and Dr. M. L. Donigan returned the low gross and low net scores, respectively.

The Montreal Dental Club held its Tenth Annual Fall Clinic at the Mount Royal Hotel on October 18th, 19th and 20th, and presented the following Clinicians: Dr. E. Bruce Clark, Uniontown, Pa.; Clifford J. Barborka, B.Sc., M.D., M.S., D.Sc., of Chicago; Dr. M. M. DeVan, Philadelphia, Pa.; Dr. J. P. Coupland, Ottawa, Ont.

Dr. DeVan lectured on "Construction of Prosthetic Replacements Prior to Removal of Condemned Natural Teeth", and fol-

lowed this with a clinic on "The Embrasure Saddle Clasp—Its Principle and Design".

Dr. Bruce Clark's lecture dealt with the science of colors in porcelain work, and his clinic on Saturday morning covered all phases of porcelain construction and its manipulation. In this clinic he was aided by four local Clinicians.

Dr. Coupland presented his view of the proper method of a complete radiodontic examination of the teeth and surrounding tissues, together with helpful hints on technique of taking and developing dental films.

Dr. Barborka addressed a gathering of about five hundred persons, including dentists, medical practitioners, and laymen, interested in diet. His lecture was an outstanding success and stimulated much discussion.

All in all, this three day Clinic was equal to the high standard set by the Montreal Dental Club in its former presentations. This Annual Fall Clinic has become one of the outstanding events in the dental world. The Clinicians are always renowned men with a vital message, and much of the continued success is due to the efforts of Dr. Geo. Cameron, who has been chairman for nine years, and Dr. Maurice Donigan, who was chairman this year.

ALBERTA

The Calgary Dental Society, at its October meeting, decided to invite the *Western Canada Dental Society* to hold its postponed biennial convention in Calgary in 1935.

The executive of the W.C.D.S. regret that, due to economic conditions, they have found it necessary to postpone their meeting for the past two years, but it is now agreed by both the executive and the Calgary Dental Society that we should again function in 1935.

Although no convention was held in 1934, the W.C.D.S., with the co-operation of Dr. Wallace Seccombe, Dean, Faculty of Dentistry, University of Toronto, was able to arrange a series of clinics on Pros-

thetic Dentistry throughout Western Canada during June of this year. These were given by Dr. Frank Lott, Professor of Prosthetic Dentistry at the University of Toronto, and lecture clinics were given at Winnipeg, Brandon, Moose Jaw, Medicine Hat, Lethbridge, Calgary, Edmonton and Saskatoon.

The Province of British Columbia took advantage of Dr. Lott's visit to the West to arrange for clinics at Victoria and Vancouver, in that Province.

Dr. Lott received many expressions of appreciation for his scholarly and thorough presentation of his lecture-clinics, and the dental profession throughout the West is indebted to Dr. Seccombe for his co-operation and assistance in arranging these clinics.

The executive of the W.C.D.S. met with the executive of the Calgary Dental Society in Calgary, on November 26th, to form preliminary plans for the convention to be held in Calgary in 1935.

In November, the proprietor of the Western Dental Laboratories, Calgary, was fined \$50.00 and costs for performing certain practices with respect to fitting dentures which are forbidden to be performed by anyone but a licensed dentist.

SASKATCHEWAN

Dr. E. E. Shepley, speaking in Saskatoon last October, stated, according to the West Producer, that municipal doctors are now operating in 110 of Saskatchewan's 306 municipalities; that is, in more than one out of every three. Dr. Shepley said that the present individualistic system of medical practice was costly and did not give the highest kind of service that was possible. A system of health insurance, he maintained, opened the way for great studies in preventive medicine.

The Saskatchewan Government is investigating the feasibility and advisability of establishing a system of state hospitalization and medical service, a delegation of the Saskatchewan Urban Municipalities Association was advised when they sub-

mitted forty resolutions to the government last October.

MANITOBA

The Manitoba Dental Association has passed a by-law making it illegal for any member to use any advertisement, handbill, circular, card, letter, poster, or sign, or make use of the radio for the purpose of calling attention directly or indirectly to any particular style of work or special method of operating, or fees for services, or prices of products, or terms of payment therefor, or to publish any testimonial or claim superiority over other practitioners. No member shall in any way advertise any operation or service as free of charge, or make use of a coupon or certificate having an intrinsic value. No member shall draw attention to a comparison of his fees or prices with those of another practitioner, or advertise that he guarantees his work or products.

At a meeting of the Winnipeg Dental Society, held November 8th, the following resolution was passed unanimously by the eighty-five members present: "We, the members of the Winnipeg Dental Society, do hereby express our hearty approval of having the Canadian Dental Association publish its own official Journal."

At this meeting Dr. H. J. Merkeley gave a very interesting address and clinic on a modified Fish technique for lower dentures.

NOVA SCOTIA

Dr. G. R. Hennigar presided at the November meeting of the Halifax Dental Society, held at the Nova Scotian Hotel.

Dr. A. W. Faulkner addressed the meeting on the subject of Dental Health Insurance. Technical papers were presented by Dr. H. M. Eaton and Dr. G. A. Chudleigh.

NEW BRUNSWICK

Dr. J. S. McEachern and Dr. T. C. Routley, president and secretary of the Canadian Medical Association, visited New Brunswick in November in the interests of closer affiliations of the various medical bodies throughout Canada.

GENERAL

Fewer Hungry Now. Dr. Grant Fleming, Director of Public Health and Preventive Medicine, McGill University, at the annual general meeting of the Canadian Dental Hygiene Council last November, stated that in his opinion there were fewer hungry people in Canada since the depression than before it. This was attributed largely to unemployment relief and to the fact that people were ready to profit by instruction as never before. There was also a decrease in the use of alcohol and in overfeeding.

The Nobel-prize in medicine for 1934 has been awarded to three physicians of the United States: Doctors George R. Minot and William P. Murphy, of Boston, and Doctor George H. Whipple, of Rochester, N.Y., for their research leading to the clinical use of liver in pernicious anaemia. The prize totals \$41,000, and was awarded because of their scientific achievement in establishing the facts that have led to the almost universal use of their suggestions in the treatment of the anaemias.

Dr. Grant Fleming, director of the department of public health and preventive medicine at McGill University, spoke on "Health and Depression" at the tenth annual meeting of the Canadian Dental Hygiene Council, held in Toronto last November. He stated that Canada's death rate had decreased during the past four years of economic stress until now it was the lowest in the history of the country.

"All who would win joy must share it, happiness was born a twin."

—Byron.

OBITUARY

F. ARNOLD STEVENSON, D.M.D., F.A.C.D.

In describing the invisible values by which men live at their best the late President Eliot of Harvard used the phrase, "the durable satisfactions of life". Despite poignant bereavement, and material reverses caused by universal depression, the late Dr. F. Arnold Stevenson knew and enjoyed many of the "durable satisfactions of life". His home life, his professional career, his church relationships, his friendships and play, all enriched his personality and ennobled his character. To the causes in which he believed, such as the Church, the higher educational institutions, and the societies for protecting the defenceless, he gave himself royally. He was a gallant Christian gentleman whom we shall sorely miss.

Dr. Stevenson was born in Reading, England, on July 15th, 1864. He came to Canada at the age of ten, when his father, the Rev. J. F. Stevenson, accepted a call to the pulpit of a Montreal church. Graduating from the Montreal High School he spent seven years in commercial life, then, the manifest lack of dentists in Montreal caused him to choose dentistry as his career. In 1884 he entered Harvard University Dental School where he became greatly interested in general surgery, and by attending extra lectures he completed three years of the medical course as well as the dental requirements. At this time the failing health of his father caused him to abandon the idea of surgery, and in 1888 he graduated with the degree of D.M.D.

Returning to Montreal he spent a year with Dr. George Beers, then opened his own office on McGill College Avenue, later moving to Peel Street. His keen interest in his work, and his enthusiastic disposition established him as a leader in all movements which sought to benefit the dental profession and the community at large. At that time there was no dental school in Montreal, and it was largely due to the

efforts of Dr. Stevenson that the Dental College of the Province of Quebec was founded. At this college, and later at McGill University, he lectured at various times on most of the subjects of the dental curriculum. He enjoyed his association with students and was the donor of the Stevenson Gold Medal for the highest standing in the final year of the Faculty of Dentistry. At McGill University he is best remembered for his lectures on Dental History, Ethics, and Economics. He was a charter member of the Psi Beta Chapter of Psi Omega Fraternity. Later he became Deputy Councillor and his advice and counsel helped many a student.

Dr. Stevenson was one of the charter members of the Montreal Dental Club, to which he devoted much time and thought. He became president in 1910. In a prominent place in his home there is a handsome silver tray bearing the following inscription, "Presented to F. Arnold Stevenson, D.M.D., F.A.C.D. by the Montreal Dental Club as a token of the esteem and affection of its members and in appreciation of his services through many years to this city, his profession, and to this Club, April 1926."

After serving on various committees Dr. Stevenson was elected president of the College of Dental Surgeons of the Province of Quebec, and in 1924 he was appointed with Dr. Arthur Langlois, of Quebec, and Dr. Joseph Nolin, of Montreal, to revise the provincial legislation governing that body. He served also as a member of the Council of Discipline. Always a believer in the principle that service to the profession should be its own reward, he opposed the payment of financial remuneration to members of the Board. This practice, he maintained, attracted to office an inferior type of candidate.

Dr. Stevenson's activities were recognized beyond the boundaries of this Province, when he became president of the Dominion Dental Council, president of the Canadian Dental Association, and a Fellow of the

American College of Dentists. One of his ambitions was to bring the Province of Quebec into the Dominion Dental Council, but this he was unable to accomplish.

Apart from his profession his keenest interest was in his church, for which he was an indefatigable worker. For many years he served as deacon in Emmanuel Church, Montreal. Interested in maintaining high quality in the worship services of the congregation, he acted as chairman of the Music Committee for a considerable period. It was part of his religion to serve cheerfully on committees of the higher courts of the Church. He did so as a member of the Montreal Presbytery's Committee on Colleges and Higher Education. The son of parents who in their generation rendered signal service to the philanthropic agencies of the city, Dr. Stevenson was an

interested member of the Society for the Protection of Women and Children.

Many happy summers were spent with his family at Metis Beach, on the Gulf of the St. Lawrence. A holiday to him did not mean sitting in an easy chair; it meant a period of glorious activity, gardening, felling trees, sailing, picnics and bonfires—all of which he loved.

In March, 1928, he retired and looked forward to many years spent in travel and in service to others. The following year, however, he suffered a great loss in the death of his wife, Jessie Thornton Wood, who had been his constant companion. In the autumn of 1933 he went to Richmond, Quebec, and resumed practice among people to whom he soon became greatly attached. His practice grew substantially, and he soon entered into the life of the



TEACH THESE SOULS TO FLY—*by Blake*
From National Gallery, Millbank, London, Eng.

town. He carried on for nearly a year, and after a short illness passed away on August 29th, 1934, in his seventy-first year. He is survived by his daughter, Jessie G. Stevenson, R.N.; his son, Frederick K. Stevenson, Notary; his brothers, G. H. A. Stevenson, D.D.S., and Barnard B. Stevenson. He will long be remembered with affection by those who were privileged to be his friends.

ERWIN C. BURBANK.

W. D. COWAN, D.D.S.

Canada, and particularly Western Canada, lost one of her most prominent and beloved pioneer dentists in the death of Walter Davey Cowan, D.D.S., which occurred at his home in Regina on September 29th.

His funeral service in Knox Church was attended by representatives of the Federal and Provincial Legislatures, civic authorities, business and professional associates and friends who crowded the large church to capacity while hundreds lined the streets, all anxious to pay their last tribute of respect and affection.

Born in Ontario in 1865, the late Dr. Cowan graduated at the Baltimore College of Dental Surgery in 1888, and came to the North West Territories the following spring, commencing practice in Regina. For many years he endured the hardships of pioneering in a new country, travelling regularly over a very large territory in the practice of his profession. He was one of those active in securing the first Dental Act in the North West Territories in the fall of 1889, and was a member of the Council of the Territories and later of the Province of Saskatchewan almost continuously, being president for a quarter of a century.

He was actively interested in the civic life of his home city, serving for many

years as school trustee, councillor, or mayor.

His adopted Province, however, was not large enough to embrace all his interest and energy. He was active in promoting the Dominion Dental Council and became its first secretary-treasurer, a position in which he served with such distinction for nearly thirty years, and which he retained until his death.

Always prominent in Federal politics, he was elected in 1917 to represent Regina in the Union Government, and since 1930 had been the sitting Conservative member for Long Lake constituency.

During the Great War, when Military District 12 was created, he was placed in command of the Dental Corps, with the rank of Major, in which position his unusual organizing ability was invaluable.

In 1929 the Saskatchewan Dental Society honored him by presenting his portrait, painted by Marion Long, of Toronto, to the University of Saskatchewan, and early in 1934 the Dental Council made him an honorary member of the College of Dental Surgeons of Saskatchewan.

In January, 1889, the late Dr. Cowan married Minnie McCarten who predeceased him in 1932. Their son, Dr. Harold Cowan, died in 1924 and their daughter, Miss Aconita Cowan, who assisted her father in his secretarial work, survives him. He is also survived by his sister, Miss Annabelle Cowan, who was associated with him in his office for many years. Sincere sympathy is extended to both daughter and sister in their loss of a beloved co-laborer.

The present high status of Dentistry in Canada is largely the result of the efforts of such pioneers as the late Dr. Cowan, who loved their profession and had a vision of the place it should occupy as a health service and who labored incessantly to make their vision a reality.

F. C. HARWOOD.

"Is life so dear or peace so sweet as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take, but as for me, give me liberty or give me death."

—Patrick Henry.

FOOD AND NUTRITION

Abstract of Editorial in British Dental Journal, October 1, 1934.

Amongst the variety of subjects that engaged attention at the Aberdeen Meeting of the British Association for the Advancement of Science, there was probably none of greater popular interest than that concerned with the problems of food supply and nutrition. There is much to be said for the outlook of Dr. Magee, that some of the most difficult investigation still lies ahead in discovering methods to apply the results reached in the laboratories to intelligent human beings, some more intelligent than others. Dr. Orr suggested in his address before the Physiology and Agricultural Sections that the time has probably come when the State might with advantage take a more active part in the regulation of nutrition. Dr. Orr remarked that the virility of the race was of more importance than the growth of armaments or development

of mechanical appliances, that machines "can be produced quickly, but it takes a generation or two to produce men".

It might have been expected that the opinions of Drs. Edward and May Mellanby upon the subject of cereals, when advanced in a supposedly porridge-fed country, would have elicited a strong body of opposition but, almost except for Mr. Elliot's defence of milk and oatmeal in combination, the chief objection urged was that an excessive proportion, and not the general use of these staple articles of diet, might be the cause for the hypo-calcification defect in bones and teeth. The essential importance of the application, early enough in the history of the individual, of measures to promote healthy metabolism was everywhere insisted upon as the most certain means of resisting disease.

PRESIDENTS OF THE CANADIAN DENTAL ASSOCIATION

<i>Name</i>	<i>Meeting at which they presided</i>	<i>Place of residence at time of election</i>
*F. A. Stephenson	1902	Montreal, P. Q.
Eudore Dubeau	1906	Montreal, P. Q.
*S. W. McInnis	(Died while Pres. elect)	Brandon, Man.
J. M. Magee	1908	Saint John, N. B.
A. E. Webster	1910	Toronto, Ont.
*W. D. Cowan	1912	Regina, Sask.
*G. F. Bush	1914	Winnipeg, Man.
F. W. Barbour	1916	Toronto, Ont.
Joseph Nolin	1918	Montreal, Que.
*Frank Woodbury	1920	Halifax, N. S.
H. F. Whittaker	1922	Edmonton, Alta.
S. W. Bradley	1924	Ottawa, Ont.
J. W. Clay	1926	Calgary, Alta.
Fred J. Conboy	1928	Toronto, Ont.
M. H. Garvin	1930	Winnipeg, Man.
A. W. Faulkner	1932	Halifax, N. S.
Philippe Hamel	1934	Quebec, P. Q.
G. L. Cameron	(now president)	Swift Current, Sask.
*Deceased		

Section Française

CONFECTION D'UNE PROTHESE DE "SUBSTITUTION IMMEDIATE" AVANT L'AVULSION DES DENTS NATURELLES CONDAMNEES A L'EXTRACTION

(Traduction du texte anglais par Jules Hamel, D.D.S., Québec.)

Travail présenté par le Docteur De Van de Philadelphie à la Clinique D'Automne du "Montreal Dental Club", 1934.

CE TITRE fut choisi de préférence à celui de "RESTAURATION IMMEDIATE" parce que ce dernier terme désigne souvent la construction de dentiers au moyen d'empreintes prises immédiatement après l'ablation des dents.—L'avulsion des dents avant la prise de l'empreinte fait disparaître de nombreux avantages.

Nous désignerons donc sous le nom de "substitution immédiate" le procédé que nous décrirons au cours de ce travail. Cette méthode n'est pas encore assez connue pour qu'il soit superflu de la justifier. Je m'efforcerai donc de vous expliquer sa raison d'être.

Les avantages d'une "substitution immédiate" peuvent se diviser en trois groupes: anatomiques, physiologiques et psychologiques.

AVANTAGES ANATOMIQUES

10.—La confection d'une pièce de prothèse, sur un modèle provenant de l'empreinte du maxillaire avec les dents naturelles encore en place, permet d'abord le choix de dents artificielles



PHILIPPE HAMEL,
Rédacteur de la section française du
Journal de l'Association Dentaire
Canadienne.

reproduisant plus exactement la forme, les dimensions et les contours des unités naturelles.—Bien que cet avantage puisse être obtenu en plaçant les dents naturelles dans une empreinte spéciale prise avant les extractions, la "substitution immédiate" nous offre

tout de même la seule méthode qui nous permette de donner aux dents artificielles l'exacte position occupée par les dents naturelles.

Il ne faut pas conclure, de cette donnée, à l'absolue nécessité d'une reproduction fidèle des dentures naturelles, car elle est rarement désirable. Il importe toutefois de bien connaître l'état de la bouche avant l'intervention chirurgicale, afin d'être en mesure de faire les corrections nécessaires.—Tout défaut d'esthétique trop évident demande un correctif, de même que les qualités esthétiques trop positives doivent être atténuées de manière à ce que la pièce de prothèse n'offre rien de trop attrayant comme parure, ni rien de choquant pour la physionomie.

J'ajouterai, en passant, qu'à la faveur de l'expérience, nous cherchons de plus en plus à établir cette "neutralité cosmétique" (cosmetic neutrality) dans notre travail de prothèse; car pour dérober à l'observateur le résultat de nos services professionnels, nous devons enlever aux dentiers leurs qualités positives ou négatives.—Toute déviation de la "moyenne cosmétique" attire l'attention, tandis qu'un point neutre la détourne.

La neutralité cosmétique ne doit pas être confondue avec la question de visibilité.—Les dents artificielles doivent avoir un degré normal de visibilité.—La plupart des dents artificielles aujourd'hui demeurent cachées sous la lèvre pour n'apparaître qu'au sourire du patient. Cette visibilité moindre aide sans doute à voiler les défauts d'une pièce construite sans l'observation des règles de l'art; mais si on harmonise la couleur des dents avec

celle de la gencive, (l'harmonie de couleurs en trois dimensions, comme la décrit Bruce Clark, la nuance, la saturation et l'éclat), on peut avantageusement augmenter la visibilité des dents artificielles, car en effet, du point de vue psychologique rien n'est plus efficace pour décevoir que d'afficher audacieusement une restauration artificielle.

Une denture artificielle "cosmiquement neutre" mais bien en évidence trompe même les plus avertis, puisqu'on s'attend généralement à ce que la perte ou l'absence de dents soit dissimulée.

20.—La "substitution immédiate" permet d'enregistrer l'articulé et l'espace normal intermaxillaire, avec les dents naturelles en occlusion. Il ne faut pas conclure ici qu'il soit désirable de reproduire avec les pièces de prothèse la même hauteur d'occlusion que celle obtenue avec les dents naturelles parfois brisées et déformées. Mais il convient de connaître exactement ce rapport pour ne pas, lors d'une correction nécessaire, ouvrir l'occlusion de plus de 4 mm. de ce point de départ. On doit avoir rarement recours à ce maximum. Tout de même il est d'ordinaire nécessaire d'ouvrir un peu l'occlusion de façon à éviter une sur-occlusion non compensée par le surplomb (overjet).

30.—La "substitution immédiate" permet de maintenir une trajectoire condylienne normale. Pour mastiquer avec des mâchoires édentées, il faut nécessairement placer la mandibule en protrusion. Dans cette position, la tête des condyles exerce sur les tubérosités articulaires une forte pression

qui tend à aplanir la cavité glénoïde. À première vue, une trajectoire condylienne rectiligne peut paraître avantageuse, vu qu'elle simplifie l'ajustement des points d'appui. Cependant, nous trouvons invariablement chez les personnes aux cavités glénoïdes, peu profondes, des mouvements de la mandibule latéraux et antéro-postérieurs plus étendus. Cette condition est particulièrement désavantageuse dans une bouche édentée, puisque la disproportion entre le maxillaire et la mandibule est à son minimum en occlusion centrale et que tout mouvement latéral ou antéro-postérieur augmente cette disproportion, vu que le plus grand arc (la mandibule) est celui qui se meut. Tout mouvement sur un plan horizontal rend plus difficile la rétention de la prothèse et peut favoriser la résorption osseuse. J'ai traité ce sujet en détails dans un article que publiera bientôt le *Dental Cosmos*. Je me contenterai donc d'affirmer que les mouvements verticaux, sans les composantes latérales ou antéro-postérieures, diminuent la torsion de la muqueuse (mucosal torque) et assurent la stabilité osseuse. Phillips, de Boston, cite un cas où un tracé condylien positif fut obtenu au moment de l'extraction. Après six mois de mastication sur les gencives, la cavité glénoïde était déformée au point qu'on dût monter les dents sur un plan presque horizontal. J'ai observé que les individus chez qui on constate une trajectoire condylienne très inclinée alors que tout mouvement latéral est faible ou n'existe pas, sont les meilleurs sujets pour la confection de prothèses.

40.—La "substitution immédiate"

prévient une résorption alvéolaire marquée. Il est reconnu en mécanique qu'un objet ne peut être soumis à l'action d'une force que s'il est assez stable pour produire une réaction égale et de sens contraire. La stabilité nécessaire pour faire contrepoids à une force se trouve particulièrement inhérente au tissu osseux, de sorte que plus la base osseuse est forte, plus grande est sa puissance de résistance aux chocs. Comme j'ai déjà écrit ailleurs sur cette partie du sujet, je résumerai en disant de la "substitution immédiate" que non seulement elle préserve les procès alvéolaires, mais elle influence favorablement la recalcification. On ne devrait jamais pratiquer l'alvéolectomie immédiatement après les extractions. Il est insensé d'altérer le contour externe du bord du maxillaire avant l'ossification des alvéoles, puisque la plupart des projections osseuses se résorbent pendant la cicatrisation des alvéoles. La "substitution immédiate" agit comme enveloppe protectrice, conservant intacts les caillots de sang nécessaires à la régénération. Les alvéoles demeurent ainsi à l'abri des aliments et de la langue et reçoivent un massage stimulant chaque fois que les mâchoires sont mises en contact. Ce juste milieu entre l'action et le repos hâte la guérison complète des plaies.

AVANTAGES PHYSIOLOGIQUES

10.—Avec la "substitution immédiate" les tissus du tiers inférieur de la figuré conservent toute leur apparence naturelle, parce que l'échafaudage nécessaire pour exercer une tension normale sur les muscles faciaux d'ex-

pression se trouve maintenu par les prothèses.

20.—La mise en place immédiate d'une prothèse élimine la période de mastication sans dents. Nous, les dentistes, nous sommes facilement portés à surestimer le rôle joué par les dents dans la mastication; elles ne sont en réalité que les doigts fixés au bras de l'appareil masticatoire. Sans le tissu osseux alvéolaire, le périoste, la muqueuse, les glandes salivaires, les muscles de la mastication et les muscles auxiliaires, telles que la langue, les lèvres, les joues, etc., la mastication des aliments ne pourrait s'accomplir. Nous mastiquons non pas uniquement avec les dents, mais à l'aide d'un mécanisme compliqué, composé de plusieurs parties dont la coordination normale doit être conservée intacte. La mastication sur les gencives exige une coordination différente; elle bouleverse le travail d'ensemble normal qui est difficilement rétabli lors de l'insertion subséquente des dentiers. Il y a déjà longtemps, le Dr M. M. House me démontrait l'importance de la persévérance chez la patient, comme élément essentiel au succès de la prothèse dentaire. Un dentier peut être construit avec beaucoup d'habileté et de jugement, mais si le patient ne persévère pas à le porter, tous nos efforts deviennent inutiles. Avec la "substitution immédiate", le client ne sera peut-être pas très à l'aise après vingt-quatre heures, cependant je ne me souviens que d'un seul cas où j'ai dû user de persuasion pour que la pièce fût portée. Ainsi, la "substitution immédiate" nous assure de meilleurs résultats en prothèse, par l'atté-

nuation sinon l'élimination complète de l'élément de persévérance chez le patient.

30.—Avec une "substitution immédiate", le langage ne sera pas affecté. La prononciation, comme la mastication d'ailleurs, peut se faire sans les dents, mais seulement après une modification compensatrice des organes associés. Cette modification s'opère surtout dans la langue: sa dimension horizontale augmente au détriment de la dimension verticale. Sans les dents naturelles ou artificielles, l'aplatissement de la langue est inévitable puisque la prononciation des consonnes surtout exige la rencontre de la langue avec une arcade ou un rebord. La langue, agissant comme soupape, exerce une pression contre certaines parties de cette arcade pour produire une fermeture complète ou partielle. Il est donc évident qu'en l'absence d'une arcade dentaire, la langue doit utiliser une autre résistance composée de tissus mous: les lèvres et les joues. Le remodelage de la langue dans une bouche édentée depuis un certain temps devient un problème épineux; et l'expérience nous prouve que ce remodelage est un des facteurs principaux de l'instabilité et de l'insuccès en prothèse.

40.—La "substitution immédiate" aidera à conserver des mouvements masticatoires toujours en relation avec l'occlusion centrale normale. J'ai déjà mentionné que la mastication chez les édentés demande des mouvements de protrusion de la mandibule. Une fois cette habitude de protrusion prise et maintenue chez un patient, il devient difficile d'enregistrer sa véritable oc-

clusion normale avec le seul moyen à notre disposition: le tracé incisif de Gysi ("Gysi gothic arch tracing").

AVANTAGES PSYCHOLOGIQUES

Avant d'énumérer ces avantages, je veux m'expliquer, de crainte que, par inadvertance, quelques-uns les jugent ridicules.

Les esprits sont aussi dissemblables que les bouches et l'on ne connaît pas deux bouches identiques. Il sera donc sage, avant d'établir un diagnostic de considérer l'état d'esprit du patient aussi bien que l'état de sa bouche. Ainsi on s'assurera que l'intervention chirurgicale ne nous attirera pas des reproches immérités. Je connais en effet plusieurs personnes dans ma clientèle, qui conservent de l'amertume pour le dentiste qui a pratiqué l'ablation de leurs dents.

L'état de la bouche peut nécessiter l'extraction des dents, et cependant dans certains cas, la meilleure pratique à suivre reste la temporisation. Pour certaines personnes à l'esprit sensible, l'idée seule d'avoir la bouche édentée devient un cauchemar. Il faut alors de la prudence dans notre décision. Toutefois, lorsque l'extraction est convenue, il faut adoucir l'épreuve par une "substitution immédiate".

10.—La "substitution immédiate" permettra de conserver les conditions objectives antérieures à l'extraction. A ses yeux et aux yeux des autres, le patient paraîtra avoir des dents; ainsi l'idée d'avoir une bouche édentée ne l'obsèdera pas. Cet individu saura qu'il n'a plus ses dents, mais il sentira peu son infirmité. Il est reconnu en psychologie que la connaissance et la

sensation sont deux états différents souvent opposés.

On peut se demander pourquoi ce souci d'empêcher le patient d'avoir conscience de l'absence de ses dents. C'est que souvent la perte des dents est mentalement associée à une perte d'énergie physique. L'expression "placer des dents dans la bouche" etc. porte à cette association mentale. Pour un homme ou une femme dont l'apparence personnelle joue un rôle important dans son occupation quotidienne, la sensation d'avoir perdu ses dents cause un pénible effet psychologique.

20.—La "substitution immédiate" adoucira, pour les natures sensibles, le choc mental qui suit la perte des dents. Une nature robuste éprouvera peut-être un malaise physique relativement court, tandis qu'une nature délicate ressentira, en plus, une profonde morbidité d'esprit. La "substitution immédiate" est la seule méthode bien-faisante, quand nous avons à traiter des sujets de cette dernière catégorie.

30.—La "substitution immédiate" évitera l'impression d'infériorité souvent éprouvée durant l'absence des dents. Lorsqu'on peut parler, manger et paraître tout comme avant l'avulsion de ses dents, on est plus facilement porté à considérer l'incident avec philosophie.

40.—Enfin, la "substitution immédiate" fera de tout "indifférent", un porteur constant de sa prothèse sans que nous ayons à faire appel à sa persévérance; nulle autre méthode ne peut donner ce résultat.—Je suis très reconnaissant au Dr M. M. House, pour cette classification des divers types de patients pour la prothèse, et surtout

pour avoir reconnu l'existence de cet "esprit indifférent ou insouciant". Si vous n'êtes pas familier avec cet état d'esprit, vous vous exposez à perdre confiance en vous-mêmes, compromettant ainsi votre succès en prothèse.— "L'indifférent" est cet individu qui a mastiqué sur ses gencives pendant quelque temps et qui se trouve satisfait du résultat obtenu. Ses proches ou ses amis l'ont, un jour, persuadé de la nécessité pour lui de se procurer des dentiers. Et plus ou moins consentant, il s'adresse à un dentiste. Personnellement, il ne voit aucune nécessité de requérir les services d'un professionnel, mais il se soumet simplement à la demande de ses parents ou de ses amis. Dans de telles circonstances, il devient difficile pour un dentiste d'obtenir la coopération et la persévérance du patient. Les dentiers sont ajustés et

mis en place, sans aucune plainte de sa part; mais il ne les portera pas. Si on lui en demande la raison, il répondra qu'il éprouve plus de confort sans ces artifices. Sa famille et ses amis savent que vous lui avez confectionné ses pièces. S'il ne les utilise pas, on conclut à la défectuosité de votre travail, et votre réputation subit un accroc.

Pour terminer, permettez-moi de vous donner cet avertissement: Si vous rencontrez un de ces "roger-bontemps", ne le laissez pas aller sans dents après l'extraction, car vous aurez alors un rude problème à résoudre.— La "substitution immédiate" est encore la seule méthode logique pour les personnes de cette nature.

La technique du Dr. De Van sera bientôt publiée dans le *Dental Cosmos*.

REUNION MENSUELLE

La Société de Stomatologie de Québec a tenu sa réunion mensuelle, le 29 novembre 1934, sous la présidence du Dr Donat Roy.

Le conférencier, le Dr. Rémy Langlois, traita: "des forces purement physiques dans la rétention des prothèses".

LA SOCIÉTÉ DENTAIRE DE MONTREAL

La Société Dentaire de Montréal s'est réunie, le 24 octobre dernier, sous la présidence du Dr J. A. Renaud.

Le Dr Gérard Baillargeon a présenté des observations personnelles:

- 10.—Ostéite fibreuse;
- 20.—Une denture parfaite;
- 30.—Un cas de tuberculose.

Le Conseil de Thérapeutique dentaire de l'Association Dentaire Américaine donne, dans la numéro de décembre 1934 (*Jour. of A.D.A.*, p. 2229) la liste des divers médicaments usités pour le traitement de la gingivite de Vincent.— Parmi les agents oxydants, le Conseil émet des doutes sur la valeur du trioxyde de chrome et du perborate de soude.

EPIDEMIE DE SCORBUS EN 1934

En 1535, Jacques Cartier perd à Québec vingt-cinq hommes de son équipage, par les ravages du scorbut.

En 1934,—quatre siècles plus tard —éclate une épidémie de scorbut dans une pouponnière à Québec (1). Quarante enfants de plus de deux ans et demi en sont atteints.

A l'examen physique, les enfants ne présentent rien d'anormal sur les systèmes osseux et neuro-musculaire.

L'examen de tous les viscères ne donne aussi qu'un résultat négatif. Seule la bouche présente un état anormal.

La muqueuse buccale apparaît très congestionnée. Les gencives sont gonflées et tuméfiées au point de recouvrir les dents. (C'est un des signes distinctifs du scorbut). Au moindre toucher, les gencives saignent.

Les petits patients offrent les signes d'une légère sialorrhée. Leur haleine est fétide.

L'examen des conditions générales présente tout au plus de l'anorexie, de la pâleur des téguments et un léger état fébrile. (D'ordinaire, chez le scorbutique, la température demeure normale ou s'élève peu au-dessus de la normale).

L'analyse du sang de ces petits malades donne une formule ressemblant à celle de la Choro-anémie accompagnée d'une hyperleucocytose. (de 9 à 12,000 globules blancs).

(1) Nous avons résumé brièvement, en ajoutant quelques réflexions, une communication du Docteur Albert Jobin, médecin de la Crèche Saint-Vincent de Paul. Cette communication a paru dans le Bulletin de la Société Médicale des Hôpitaux Universitaires de Québec en septembre 1934.

On constate aussi à l'analyse du sang une diminution des polynucléaires avec augmentation relative des lymphocytes. Dans un cas, on trouve même 37% de polynucléaires et 63% de lymphocytes.

Quelques malades ont des épistaxis répétées.

DIEULAFOY a prétendu qu'avant l'âge de cinq mois l'enfant ne souffre jamais de scorbut. L'expérience n'a pas encore contredit cette prétention, mais lorsque le même auteur déclare que les enfants passés l'âge de dix-huit mois ne deviennent pas scorbutiques, il fait erreur. Le présent exemple suffirait, à lui seul, à contredire l'auteur sur ce point.

Ces quarante petits scorbutiques sont soumis à un régime riche en vitamine C, jus d'orange et de citron. On donne à chaque enfant le jus de deux citrons, en vingt-quatre heures, en ingestion. On utilise aussi le jus de citron comme collutoire.

En trois jours, généralement, la guérison est obtenue.

x x x

Cette épidémie de scorbut à Québec, prend à la veille du quatrième centenaire de l'apparition de cette maladie au Canada, un caractère notable d'originalité.

En 1535, vingt-cinq hommes, nous l'avons vu, perdent la vie, et le reste de l'équipage de Jacques Cartier menace d'être emporté par cette maladie, quand à la fin d'une neuvaine faite à la Vierge, un sauvage vient suggérer comme remède efficace une infusion d'écorce d'épinette blanche. Jacques Cartier sauve ainsi ses moribonds.

—P. H.

EDITORIAL

Enfin l'Association Dentaire Canadienne publie son premier bulletin mensuel. Dorénavant il représentera l'organe officiel des dentistes du Canada. Le conseil d'administration de l'Association Dentaire Canadienne projetait, dès 1926, la publication d'une revue dentaire. Depuis huit ans, tous les présidents de cette association avaient compris l'importance et la nécessité, pour notre profession, de posséder un journal où s'exprimeraient officiellement les vues de notre corps professionnel. Malheureusement, des difficultés sans nombre retardaient toujours la mise en oeuvre de ce projet. Sans diminuer en rien l'excellent travail de certains présidents,—tel un Faulkner de Halifax, ou un Conboy de Toronto, ou de certains lieutenants discrets, comme le Dr Moore de London,—il faut, croyons-nous, en toute justice, regarder le Dr Harry Garvin de Winnipeg comme le véritable père de ce journal. Nul dentiste ne se doute de la somme d'énergie dépensée à cette fin par notre confrère.

En 1933,, le Dr Garvin parcourt le pays depuis Winnipeg jusqu'à Halifax, sans rémunération, se faisant le propagandiste de l'Association Dentaire Canadienne et de son futur journal. Il donne des causeries, des conférences, aplanit des difficultés, fait sauter des obstacles pour doter sa profession d'un moyen efficace de répandre, avec autorité, la pensée de son élite et le fruit du travail de ses hommes de science.

En fondant une revue dentaire, nous comblons seulement une lacune. Nous suivons tardivement l'exemple de groupes professionnels, quelques-uns plus jeunes que le nôtre, d'autres plus âgés. Et tout le travail accompli par l'Association Dentaire Canadienne pour une publication scientifique mensuelle serait demeuré vain sans l'encouragement que nous ont accordé les Bureaux Provinciaux de chirurgie dentaire au Canada. L'Association Dentaire Canadienne l'apprécie et leur en sait gré.

Pareille oeuvre ne serait viable sans l'appui et le soutien de la majorité des membres de la profession. Conduite par des dentistes à leur début comme rédacteurs, elle comprend la nécessité de la critique, mais elle la voudrait bienveillante et constructive.

De nos confrères plus âgés nous comptons recevoir des conseils utiles. Rares sont les dentistes de cette génération des anciens qui ont eu l'avantage d'extérioriser leur savoir dans des revues. Il nous sera difficile, nous l'appréhendons, de vaincre leur timidité, même si leur

plume est demeurée en forme. Mais des jeunes de talent et de tous ceux à peine rendus dans la quarantaine, nous sommes en droit d'attendre de la collaboration. Nous ne demandons pas nécessairement des innovations ou des découvertes, mais du moins des études fouillées sur différents sujets. Donc à l'oeuvre, notre élite. Faites rayonner autour de vous votre savoir. Le journal devrait en somme n'être qu'une mutualité de l'enseignement. C'est le point central où les dirigeants d'une profession viennent apporter le fruit de leur culture pour que les autres s'y alimentent. Le goût du travail, conservons-le, développons-le. C'est là l'unique moyen de bien jouer notre rôle professionnel. Ne soyons pas de ces parasites qui, afin d'amasser fortune, prennent à une profession le prestige que lui ont conféré la dignité et la science des anciens pour le lui remettre amoindri au déclin de leur carrière. Ceux-là ravalent leur profession soit par une réclame tapageuse, soit par la pratique charlatanesque ou commercialisée de leur art. Ces confrères utilisent tout le bon d'une profession à leur seul profit et n'apportent pas le moindre concours au perfectionnement scientifique et moral du groupe auquel ils appartiennent. Fort heureusement, c'est là le petit nombre. Sans les mépriser, gardons-nous de les imiter.

Tous ne peuvent collaborer au journal dans la même mesure, c'est compris. Cependant, tous les dentistes soucieux de leur avenir professionnel doivent affirmer leur personnalité par leur science et leur culture parmi leurs confrères. Tous nos dentistes de valeur doivent nous apporter au moins de courtes observations contrôlées scientifiquement. Les succès relatés avec franchise servent autant sinon plus à instruire que les succès éclatants, et deviennent souvent une contribution particulièrement appréciée. La discrétion du journal ne permettra pas la divulgation du nom d'un collaborateur désireux de garder l'incognito.

Dentistes du Canada, votre revue scientifique vient de naître. A vous de l'entourer de votre sollicitude et de lui accorder, sans ménagement, votre généreuse collaboration.

Les difficultés à surmonter dans l'exercice de notre art demandent aujourd'hui plus de connaissances chez les professionnels que jadis. Et tout dentiste satisfait de la médiocrité sera fatalement voué à l'exercice pénible de sa profession au milieu d'un public plus connaisseur et, partant, plus exigeant.

Le journal offre un excellent moyen de perfectionnement, et c'est dans ce dessein principalement que l'Association Dentaire Canadienne le présente aux dentistes du Canada.

Ce journal reflétera l'image de la Chirurgie Dentaire au Canada. A nous tous de lui donner de l'éclat.

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I MUST HAVE HILLS TO CLIMB

By GEORGE FREDERICK CLARKE, D.D.S.

I have a hill to climb.
Bare, save for a few tall trees,
For the free winds to whisper drowsy secrets through;
And grass with fifeing crickets for the placid hour
When the sun sinks, and the faithful dark returns
With her attendant stars.

I have a hill to climb.
High, but not too high
To hear the constant murmur of the stream
Over the gravelly bars
Far, far below;
And see the washed reflection of the moon;
Here, all alone,
In the moon's rays
And the cold pure stars
And the sweet earth smells—
I am made clean again:
All sordid passions fled,
And all my thoughts are peaceful as the night.

I must have hills to climb.
When the last hour comes for me to live,
God give me strength to foot the winding path
To the topmost upland, where a white birch stands
In stately splendour throned against the blue;
Here let my soul take shift,
Up—ever up—
Explore the kindred hilltops of the sky,
Where the sweet, sacred dreams of youth
Shall know and welcome me, their vagrant child.

WOODSTOCK, N. B.



GEORGE L. CAMERON, M.D.S. (McGill), D.D.S. (McGill), D.S.O.
Swift Current, Saskatchewan.

President of Canadian Dental Association.

Past-President, Swift Current Dental Society, Saskatchewan College of Dental Surgeons, Western Canada Dental Society and Swift Current Rotary Club. Past Grand Master, I.O.O.F. (Sask.). Chairman, Swift Current Collegiate and Public School Boards. 2nd in Command, 1st Battalion Canadian Infantry, C.E.F., wounded, mentioned in dispatches, awarded Colonial Officers' Long Service Decoration (V.D.). Assistant Director Dental Services, M. D. Nos. 12 and 13.

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CAUSES OF DENTAL IRREGULARITIES

By WM. W. WOODBURY, Halifax, N. S.

INNATE curiosity prompts us to ask "Why?" in the face of anything we do not understand. Your thoroughgoing scientist is quite content to let it rest at that. The fact that he does not know is sufficient to induce him to try to find out. Dentistry, however, is by no means pure science. Of necessity it is a mixture of art and science; but the science is essential, if the art is to be securely based. We are convinced that if we could understand the origin of the conditions we are called upon to treat, we would treat them more intelligently. Our problem is clearly stated for us by Professor Brash¹ in his book, "The Aetiology of Irregularity and Malocclusion of the Teeth." He tells us that "The two main problems of Dental Science are, by common consent, of an aetiological nature—the problem of dental caries and the problem of irregularity and malocclusion of the teeth. Whatever one may think of the declaration of Charles H. Mayo in 1913 that the next great advance in preventive medicine should come from the Dental Profession, at least there can be no doubt that the progress of Dental Science as such is bound up with the solution of these two problems. It is equally certain, apart from the rela-



WM. W. WOODBURY
President of Nova Scotia Dental Association.

tion of the two problems to each other, that the problem of caries is at one and the same time by far the more important and by far the simpler. There are doubtless multiple factors to be considered in its causation—in what pathological condition are there not?—but in decay of teeth, as compared with irregularity in their position, we have to deal with a comparatively clear-cut problem, the solution of which, though not likely to be

found in a single, simple 'cause,' may be expected to be correspondingly precise.

"The problem of irregularity and malocclusion on the other hand, since it is essentially a problem in the development and growth of the jaws and because of the multiplicity of the factors determining their form that must therefore be taken into account, is a problem of much greater and indeed an almost baffling complexity."

PROBLEM DIFFERENT TWENTY-FIVE YEARS AGO

Twenty-five years ago this complexity was not so fully realized. Then an editorial request for a paper under the above caption would have been relatively easy to comply with. It was acknowledged that the causes of irregularity and malocclusion were not all known, but there was considerable confidence in setting forth those that were thought to be responsible. The passage of the years has not tended to confirm this confidence. It survives but it is not so widespread as it was a quarter of a century ago. While the gradual increase of our knowledge has furnished us with some additional facts, at the same time it has raised serious questions concerning many ideas that passed for facts. The sequence of cause and effect is not so easy to establish as we had thought. It may be noted that a certain condition frequently antedates or accompanies a malocclusion. It is quite another matter to produce convincing evidence that it has caused the malocclusion. Mouth-breathing is a case in point. It was seen that sometimes, children that were mouth-breathers, had narrow dental arches. It was natural to reason that the mouth-breathing caused the malocclusion. The idea became so

firmly established that Angle made it an integral part of his scheme of classification. In 1931 Howard² reported a study of 500 cases that had suffered from enlarged tonsils. Of these, 159 were found to be mouth-breathers. Of the 159 mouth-breathers, 94 presented normal jaws, arches and occlusion and only 22 fell into Angle's Class II, Division I (i.e. narrow upper arch with protruding incisors and lower arch occluding posterior to the typical relation) which condition we had been taught was due to mouth-breathing. In the light of this the classic dental explanation is not convincing.

PRESENT STATUS OF AETIOLOGICAL FIELD

Findings of this sort naturally raise the question of the present status of the whole aetiologic field. If a generally accepted "cause" such as mouth-breathing has such evidence marshalled against it, what of other supposed causes? In other words, what is really known? Fortunately we are now in possession of a very competent piece of work to help us answer this question, viz., the book already quoted. Professor Brash while at Birmingham, made, from time to time, notable contributions to the problem of the growth of the jaws. He now occupies the chair of Anatomy at Edinburgh and becomes a successor to the three Monroes, Goodsir, Turner and Cunningham. These lectures were delivered in 1929 at the invitation of the Dental Board of the United Kingdom. There is a competent bibliography. No one interested in orthodontic aetiology can afford to be unfamiliar with this survey of the subject.

"Essentially a problem in the development and growth of the jaws"—thus

Professor Brash marks out our task for us. Whether we would or not we find ourselves concerned with one of the great central problems of biological science. Genetics, the "growth impulse," the things that help growth and that hinder it, these must be our concern. Many of us who have been in practice for some years will recall that we were not introduced to the subject from that angle. Teeth were either regular or irregular. If the latter, they might be straightened if we had the ingenuity. The approach was thus frankly mechanical. Perhaps we were told that the causes were either hereditary or acquired. But there was slight indication that this classification of causes was vitally connected in the mind of the teacher with the idea of growth and development. There was, however, this speculation as to whether these conditions were handed down from parent to child or were due to surroundings, and thus heredity and environment came to be familiar words in our literature. We would probably still agree that those two categories must of necessity cover all the factors involved. But it is one thing to be convinced that our categories are all-inclusive and quite another thing to be able to untangle complex phenomena and allot a multiplicity of factors to these categories with confidence. Our knowledge is not sufficient for this. The genetic machinery of the cell grows unbelievably complex the more it is understood and environment comes into the picture from conception on, if not before, as some would have it. We would do well to watch our step at this point. Many men seem to think of heredity and environment as separate discrete entities that are engaged in a battle for control of a third

entity which is the organism, whereas in reality they are only words that remind us that growth and maintenance are the result of a constant interaction between that which comprised the organism at the start and that which surrounds it. Orthodontics has tended to forget this two-fold phase of a fundamental unity and to cast its vote for heredity *or* environment. For the past two or three decades environment has been its favourite. As a result we have thought chiefly in terms of nutrition, function, habit and the like. Inheritance has been practically ruled out.

FAULTY DIET AND IRREGULARITY

It has been largely taken for granted that the jaws will grow and the teeth be regular if food and function are adequate and there are no habits to interfere. It is only possible to touch on these matters in a short article, but let us look at them briefly. Of course there is a good reason that children should be well fed. But our question here is, does faulty diet make for dental irregularity and malocclusion? Many general statements in our literature say Yes. Unfortunately, general statements are more in evidence than reports of careful investigation. Two such reports, however, may be noted. Friel³ went to Vienna in 1920 and examined 520 children. Although the weight and height of these children, who had been on a very deficient diet for a long time, were below normal, and although "rickets, tuberculosis and anaemia were very prevalent" yet "malocclusion did not seem as marked as in England except that produced by premature loss," and Friel sets forth in detail the data on which this conclusion is based. The year before, Hatfield⁴ had

reported the dental condition of 15 children suffering from rickets. This disease is generally considered a deficiency disease and many of the orthodontic texts set forth in detail the particular sort of malocclusion that it produces. Hatfield's observations failed to confirm this. He draws no conclusion, no doubt feeling that the sample is small, but the result is suggestive. Chew and your jaws will grow—thus the dental slogan. This introduces a vast subject with a voluminous literature, the interplay of form and function. Form is dependent on function, is the positive statement one hears. This is very simple and very definite. If accepted, the logical procedure is obvious. Establish correct function and normal form is assured. Chew hard food and exercise the muscles of the jaws and the jaws will grow as we desire them to do. But is the problem quite so simple as that? Is form dependent on function? Partly, no doubt, but how much we do not know. Howard² says:

"It has been my privilege to observe individuals who have never masticated a morsel of food, but who present an excess growth of arches and jaws. Function in these people was nil and muscular development was nil; but growth progress of the bone was magnified. I have observed many youthful individuals who had not grown in stature for three, four or five years, but who, over a period of twelve months, grew from three to six inches. Muscular development played no part in this increase in bone volume."

From the evidence available to date it would appear that muscular pull influences surface markings and to some extent trabecular change within the bone.

That it is responsible for bone growth, i.e., increase in the volume of bone is yet to be proved.

HABIT

What of habit? It has held a major place in our scheme of causation for years. One has an uneasy feeling that this pre-eminence has been achieved rather more by a process of rationalization and easy generalization than by direct evidence. Too many cases come to mind where the child sucked the thumb, for instance, and there was no dire dental result, or conversely where the clinical picture would presuppose the habit but the history does not elicit it. On the other hand there are the cases where on discontinuance of the habit the dental condition promptly improved, pointing definitely to a casual relationship. The oft-quoted remark of Northcroft comes to mind. "I confess there are models in my collection that seem to prove or disprove any dogma."

The foregoing doubtless appears altogether too negative to many, if not positively destructive. But it is to be noted that the dental clinicians join the anatomist in taking up this negative attitude. Indeed some of them do not hesitate to make categorical statements relative to our deficiencies in this field. Johnson⁵ says, "Aetiology is the blank page in orthodontics." Hellman⁶ tells us that "the actual cause of malocclusion is not known" and Howard² concludes in the article above cited that, "The aetiology of growth anomalies of the jaws and dental arches remains unexplained." These men are simply well known representatives of a growing body of orthodontists who realize the inadequacy of the present aetiologic picture.

NEW VIEWPOINT NECESSARY

It looks as if a fresh attack is needed, and Brash¹ indicates the direction he thinks it should take. He says: "I suggest that the time has arrived to substitute for the provisional hypothesis of environmental influence in the wide sense—which appears to have inspired most of the investigations and most of the discussions that have taken place in the past—the other provisional hypothesis that irregularity and malocclusion are inherited conditions, and to let that inspire future discussions and future investigations."

He does not say that the solution lies solely in this direction, and he does not rule out environment by any means. He simply suggests that orthodontics is not making much progress in thinking almost exclusively in terms of environment and that it is time we brought back heredity into the picture. To banish inheritance has been a tendency of recent decades. Kingsley⁷ was not so one-sided in his attitude. How then have we come to think of the mouth as immune from hereditary influence so that we expect it to exhibit a pattern of perfection that is not to be found elsewhere in the body? It would not be very difficult to defend the thesis that this is an unconscious by-product of our ultra-mechanical training as dentists.

RESEARCH

The work that Professor Charles R. Stockard is carrying on with his dogs at the Cornell Experimental Morphology Farm is very suggestive in this connection, and is a notable beginning along the line that Brash suggests. The dog presents a tremendous morphological diversity within the species, none greater

among the higher animals. The dental arrangement in the different breeds is quite various. One would not expect the long snout of the greyhound to present the same dental arch as that of the bulldog. "Dr. Stockard has recognized the fact that certain of the distorted characters of various dog breeds are closely similar to structural modifications known in man as a result of deranged endocrine functions."⁸ When these pure-bred dogs that are kept under as ideal environmental conditions as science can devise are cross-bred and the resulting generation interbred, members of the third or F₂ generation are sometimes seen to present "marked anomalies both in the structural formation of the teeth and in their supporting structures as well as in occlusal relations. The experiments have gone far enough to show clearly the need of knowing the nature of experimental animals before drawing conclusions from, e.g. vitamin deficiency diets."⁸

MAIN AETIOLOGICAL PROBLEM

We have made no reference to the local and more or less obvious causes of irregularity such as premature loss of teeth or presence of supernumeraries. While these factors are by no means negligible and while the solution of the ensuing conditions is often very puzzling, they do not constitute our main aetiological problem.

Perhaps as individuals we may feel that we are not likely to make very much contribution to the solution of all this, and probably few of us will do so directly, but there is one way in which we can all help. We can build up in our own minds a determination to maintain a clear-cut distinction between fact and conjecture, a sturdy refusal to accept as a fact

any statement that is not backed by evidence based on observation, and so we will do our part toward developing a dental constituency that will be sympathetic to the serious scientific work that must be done if the present chaos is to be reduced to some semblance of order. Plato's definition of science as "seeing things as they really are" illustrates the spirit of this attitude. Our literature is not notable for this quality, and we have allowed ourselves to be swayed by preconceptions. We do not realize "the prehensile nature of patterns in the mind, whereby they seize upon ideas and facts that fit into and complete their design"⁹ and reject those that do not.

If we are compelled to abandon a good part of our past we stand in very good scientific company. In his Presidential Address, delivered before the meeting of the British Association for the Advancement of Science last September, Sir James Jeans¹⁰ talked about "The New World Picture of Modern Physics." He introduced his subject as follows: "It is a full half-century since this chair was last occupied by a theoretical physicist in the person of the late Lord Rayleigh. In that interval the main edifice of science has grown almost beyond recognition, increasing in extent, dignity and beauty, as whole armies of labourers have patiently added wing after wing, story upon story and pinnacle to pinnacle. Yet the theoretical physicist must admit that his own department looks like nothing so much as a building which has been brought down in ruins by a succession of earthquake shocks. The earthquake shocks were, of course, new facts of observation, and the building fell because it was not built on the solid rock of ascertained fact,

but on the ever-shifting sands of conjecture and speculation.' As Jeans develops his theme it becomes evident that even in those fields that we were taught to regard as "the exact sciences" it is extraordinarily difficult to distinguish between conjecture and speculation on the one hand, and fact and reality on the other.

Surely we should not be either surprised or discouraged if we find ourselves in a similar situation.

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IMMEDIATE DENTURE INSERTION

By JOHN A. BOTHWELL, D.D.S., Toronto, Ontario

THE question of whether to insert dentures immediately following extraction or to wait until the tissues are healed is one of the controversial questions that has caused some concern to the Dental Profession for a great many years. Today we have enough evidence both scientific and practical that there is no disputing the fact that the "immediate insertion" if properly done is the best possible service that can be rendered the patient who has had the misfortune to lose his teeth.

In this consideration of "immediate insertion" there is certainly no place for the old idea of the artificial teeth being set in the sockets of the recently extracted natural teeth. In every case a labial and buccal gum is necessary for a successful result.

For many years I have been using different techniques for this service and have now developed one that is simple and yet adequate, a technique which gives the most wonderful satisfaction both to the patient and myself. It results in having firmer and healthier tissues over a regenerated bone, brought about as a result of the stimulation of mastication; and from the viewpoint of aesthetics, the patient never has to appear without teeth. Dr. Boyd Gardner of the Mayo Clinic, Rochester, Minnesota, said before the New York State Dental Society in May, 1934, "In post-operative care we are in-



JOHN A. BOTHWELL

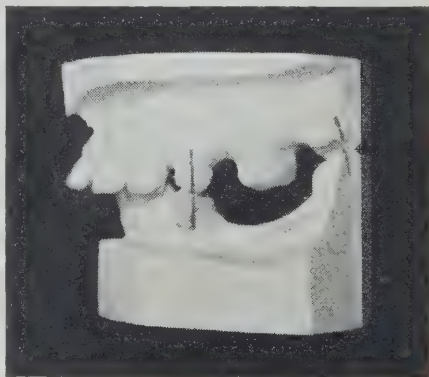
terested in that management which will result in early repair of tissues and immediate dentures appear to meet the demand for such results. I appreciate that reference to such management has been made by many others, so my reference is merely to add emphasis. We must consider that the impressions are made of soft tissues only, and therefore the more uniform the oral surgeon leaves the soft tissues after extraction, the more uniform will be the denture. Moreover, one must appreciate that the denture becomes a matrix, and as the alveolar process repairs, it will do so more uniformly if the denture which constitutes the matrix does not reflect irregularities that so often are

the result of lack of attention paid to trimming, suturing and so forth, by the oral surgeon. This stimulus to resistance by the denture is obviously the same as surgical cement offers in the so-called surgical treatment of pyorrhea. Perhaps the phrase 'resistance stimulation' could be coined to exemplify such phenomena. A similar idea is utilized by some orthopedic surgeons in fractures of, for instance, the femur. Even though the roentgenogram reveals the bones to be in good apposition and so held by a suitable cast, repair fails to take place until the patient is encouraged to get up and walk; by so doing, pressure is brought about on both proximal and distal ends, which results in stimulation and brings about repair. The work of Jones and Roberts on calcification, decalcification and ossification further emphasizes the part exercise plays in calcification, or perhaps a better term would be 'mineralization', as reference is made to minerals other than calcium. Immediate dentures make postoperative hemorrhage easier to control, and last, but not least, the morale of the patient is sustained, as the mandible will then not be allowed to move in closing to a point not heretofore experienced." As a result of this regeneration or "mineralization" of bone, the postoperative change in the ridge tissue is very little, a feature greatly to be desired. In my practice many dentures are worn a year and sometimes nearly two without any noticeable change in the ridge tissues. Because of these results, noted from a close observation over a long period of time, I feel every practitioner owes it to his patient and to himself to use the "immediate insertion" technique.

TISSUE-MOULD

Even if only a few teeth at a time are being extracted, I firmly believe that the ideal treatment is the insertion immediately following extraction of what I have chosen to call a "tissue-mould" or "tissue-adaptor" with an occluding surface, for each edentulous area. The method of attachment for these "moulds" must be determined by the operator, as each case presents a different problem. These "tissue-moulds" serve as real bandages or matrices for the tissues, and the bone-regeneration begins immediately just as if the permanent denture were in place. As more teeth are extracted the "tissue-adaptor" may be increased in size to cover these areas. And these "tissue-moulds" are worn until in my judgment the mouth is ready for the permanent restoration. When the permanent restoration is to be a full denture, I sometimes leave the six anterior teeth to be extracted immediately before the permanent denture is inserted. When this is done the permanent denture serves as a "tissue-mould" for the anterior areas.

In certain types of cases when a complete extraction is to be done and where



Cut No. 1

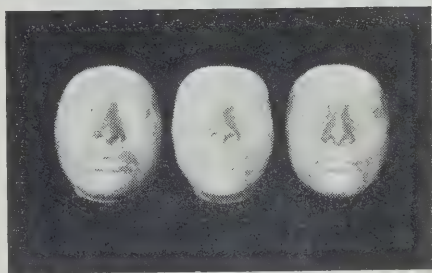
all teeth may be extracted at one sitting, I insert the permanent denture immediately and it serves as a "tissue-mould" for the whole maxilla or mandible, as the case may be. Then, instead of a second denture, when oral conditions warrant it, a rebasing operation is done.

METHOD OF PROCEDURE

Below is my average procedure for every prosthetic case, even where the whole mouth is edentulous. I modify or enlarge upon this as different cases warrant it. I begin with a thorough clinical and full mouth X-ray examination. The X-ray examination tells the story not only of apical conditions but of the condition of the bone throughout the mouth and reveals any remaining fragments of roots. We should all be certain for our own protection that we are inserting dentures on perfectly healthy tissue. My next step is to procure study models of the mouth, articulate them (Cut No. 1), and plan



Cut No. 8



Cut No. 3



Cut No. 5

and record my procedure just as an engineer would draw his plans and make his specifications for a piece of construction work. In Dentistry this may be summed up in the words Diagnosis and Advice. The succeeding steps follow in this order: a Shadowgraph or Profile record made radiographically; a Facial Cast which provides a permanent record of the facial contour; two sets of models of the anterior teeth—one for aesthetic purposes from which the length, width and form of the natural teeth should be noted, and the other to aid the exodontist in the alveolectomy operation; a model procured from a labial impression with the anteriors in a natural closed position, to show the relation as to overbite and overjet; and finally a working model to be procured from a full impression—preferably sectional (Cut No. 5). The



Cut No. 2

Cut No. 7

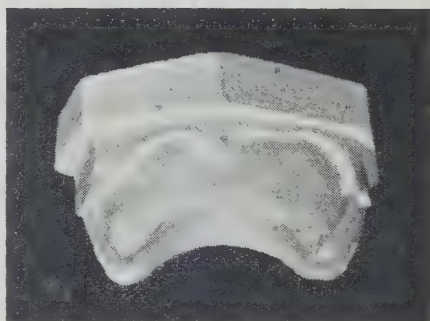
bite operation will follow and then a Try-in for the edentulous areas for checking the aesthetics and the bite; and finally the finish of the denture. The remaining teeth will be extracted on the day the finished denture is inserted. With all the information the examination, records and models provide for our plans and our general knowledge in denture technique, we can hardly go astray.

SUMMARY

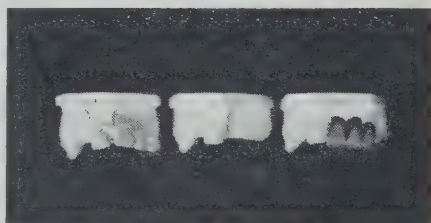
Below is a summary of the steps in their respective order leading up to the completion of a Full Upper Denture, inserted by me immediately following the extraction of five remaining anterior teeth and an alveolectomy. The surgery was done by Dr. W. J. Kerr at a clinic given by him and me at the Ontario Dental Association convention in May, 1933. As the case was a very difficult one every precaution was taken to ensure success.

The highlights of both my own and the complementary laboratory technique follow:

1. Complete oral examinations including clinical and X-ray examination.
2. Upper and Lower Study Models articulated (Cut No. 1).



Cut No. 6



Cut No. 4

3. Diagnosis and advice.
4. Photographs—full face and profile (Cut No. 2).
5. Shadowgraph of profile. (This is procured by the use of the X-ray machine.)
6. Facial Cast (Cut No. 3—Model 1).

7. Full Upper Aesthetic Model (Cut No. 4—Model 1).

8. Extraction of all teeth posterior to the cuspids.

9. A sectional impression of the maxilla for Working Model (Cut No. 5).

10. Impressions for two Alveolectomy Models.

11. Bite with Bite-block—Selection of shade and mould.

12. Try-in of posterior teeth—as set up on Working Model—for checking aesthetics and bite-opening.

13. Trimming of anterior portion of Working Model as we deemed advisable (Cut No. 6).

14. Impression in compound of trimmed Working Model for making duplicate model on which to construct a transparent celluloid base for the dental surgeon's guide during the alveolectomy operation.

15. Trimming one-half of Alveolectomy Model (Cut No. 4—Model 2).

16. Trimming of second Alveolectomy Model (Cut No. 4—Model 3).

Model No. 3 of Cut No. 4 shows porcelain teeth set eight millimeters lingual to the natural teeth at the mesio-incisal angle.

17. Setting up anterior teeth using Model 3 in Cut No. 4 as guide.

18. Finish of denture.

19. Extraction of anterior teeth and alveolectomy by Dr. W. J. Kerr.

20. Immediate insertion of denture.

21. Facial Cast one week later (Cut No. 3—Model 2).

22. Photographs—full face and profile—one year later (Cut No. 7).

23. Model 3 on Cut No. 3 shows cast of face one year after the insertion of the denture. Cut No. 8 shows profile of casts before extractions, immediately following insertion of denture and one year later.

Note the improvement in the nostrils and lips. An X-ray examination of the anterior bone made one year later shows beautiful healthy regeneration. At this time the denture showed perfect stability.

Medical Arts Building.

DATES TO REMEMBER

MAY 20-22—ONTARIO DENTAL ASSOCIATION
CONVENTION IN TORONTO

JUNE 3-5—WESTERN CANADA DENTAL SOCIETY
CONVENTION IN CALGARY

DIET IN HEALTH AND DISEASE*

By CLIFFORD J. BARBORKA, B.S., M.S., Sc.D., M.D., Chicago, Illinois

STEFFANSON, the Arctic explorer, has stated that with the exception of religion, there is no field of human thought in which sentiment and prejudice take the place of sound judgment and logical thinking so completely as in dietetics. Nevertheless, diet today is recognized as of great importance in relation to health and disease.

A large majority of adult patients who consult the average physician are interested in diets. Food is being recognized as a most important social factor in the life of every human being. Events are occurring today that indicate how international relationships are affected by our universal dependence upon the adequate supply and distribution of food. Medical treatment is resolving itself more and more into modifications of food ingested and the dental profession's attention has been directed to the possible relation of diet to dental caries. As a matter of fact, the abundance or dearth of food, its cost and distribution, affect indirectly but intimately, the therapy of every patient.

Within the last few years our scientific knowledge of the vitamin content, mineral elements, and other constituents of food has increased tremendously. Coincident with this advance, which has developed a more thorough appreciation of the use of properly selected foods in

the promotion of health, the food fakirs, faddists, and pseudoscientists, picking out an occasional truth, distort it and broadcast to the unsuspecting public a tremendous volume of misinformation. The public exhibits a surprisingly great concern, in some instances laughable, and in many, tragic, and place diet therapy in the category of patent medicines.

Regardless of the fact that we have in our present day of highly industrialized civilization, a situation where, with a wider range of foods to choose from than any people have ever had before, the nutritional conditions and physical vigour of our nation has unquestionably deteriorated.

The chief habits in the character of the average diet may be summed up as follows:

(1) Cereals and breadstuffs form a larger bulk of the diet than ever before, and most of these are consumed in the form of highly milled products.

(2) Sugar forms a larger proportion of the diet than previously; during the last century of progress the consumption of sugar has increased from 8 lbs. per capita in 1823 to 128 lbs. per capita in 1933.

(3) More highly refined, canned and preserved foods are used.

(4) Meat, dairy products, and eggs are used less freely than formerly.

As a result of these habits the average

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diet is likely to be deficient in minerals, residue, and vitamins.

Other factors that influence our food habits are the forces that encourage erroneous ideas about food. In the field of diet as in that of religion, people seem to cling to their beliefs most tenaciously and to champion them with much unreasoning prejudice. Many superstitious beliefs about food have been handed down to us through our ancestors. For example: that lemons and oranges cause "acid stomach," prunes are a "cure-all" for constipation, raisins are needed by all for iron, onions will cure a cold, celery is a nerve tonic, fish is a brain food, honey and molasses are better than cane sugar, milk is fattening and constipating, and that certain food combinations are very harmful such as: lobster and ice cream, milk and cherries or any acid fruit, and fruits and starches, and protein rich foods with starches. Most of these ideas are myths very much like the legend that eating heart made one courageous. There is little or no foundation for the belief in the special efficacy of special foods. The idea of foods reacting in such mysterious ways and forming explosive mixtures is entirely a creation of the lurid imagination of food cults, and there is no scientific foundation whatever for such myths. It is true that the over-indulgence in any one or more than one group of foods may be harmful under certain conditions.

One would think that with the recent popular interest in psychology, the laymen would begin to realize that such factors as the power of suggestion, the influence of fear and the desire to believe, also play a very important part in shaping our beliefs about food. Millions of



CLIFFORD J. BARBORKA

people suffer from just such inhibitions of being unable to eat certain foods, who could undoubtedly eat those foods in moderate amounts if they only thought they could.

The reason for our defective food habits may be summed up in a few words—ignorance, indifference and faulty food preferences. There are several influences at work which are making for improvement in our dietary habits. The foremost of these is education. There seems to be an increased interest in, and appreciation of, the importance of a balanced diet and proper health habits.

The term "protective foods" has been applied to milk and leafy vegetables, since they correct the calcium and vitamin deficiencies of the average diet. The greater use of "protective foods" is becoming more widespread every day, and milk, fresh meats, eggs, fruits and vegetables are available in the smallest places throughout the year.

In order to formulate proper diets in the treatment of disease, it is first necessary to have a comprehensive grasp of the nutritive principles of diet in health. All the newer knowledge of the nutritive needs of the human body are the result of experimental studies on animals, correlated with the application of these studies on human subjects.

There are certain essential requirements that all diets must possess, in order to adequately protect and maintain health. These requirements are:

1. Adequate protein.
2. Mineral elements.
3. Vitamins.
4. Sufficient calories for energy requirement.
5. Water.

ADEQUATE PROTEIN

The ingestion of food usually is considered to satisfy two physiologic requirements: First, to furnish raw material for the growth and repair of body tissues, and second, to furnish energy for the processes of life. For the first purpose, protein alone will suffice. One of the most confusing problems of nutrition both in health and disease, is the question as to what is the adequate amount of protein necessary for the diet. Many factors affect the level of protein metabolism and although opinion varies, we consider 1 gram for each kilogram of body weight adequate for the average normal adult.

MINERAL ELEMENTS

The hidden mysteries of cell-life which are slowly being unravelled are intimately connected with inorganic mineral elements. The body contains about twenty of these elements in appreciable quantities. Adequate amounts are essential.

The average dietary is probably more deficient in calcium than in other ingredients. The requirement approximates 0.75 to 1 gm. which is the amount contained in 1 liter of milk (1 quart). The daily food of an adult should contain about 15 mg. of iron. Iron is present in lima beans, peas, unmilled wheat, lean beefsteak, spinach, oatmeal, raisins, eggs and green vegetables. The ordinary diet is not deficient in iron. The importance of copper has been realized from the work of investigators at the University of Wisconsin who feel that deficiency of this element interferes with the assimilation of iron.

The amount of phosphorus required by adults has been estimated to approximate 1 to 1.5 gm. a day. It is essential to the nuclear constituents of blood and lymph plasma. The dietary is often deficient in phosphorus despite its wide distribution as an inorganic element in foods.

In certain areas of endemic colloid goitre, the water and vegetables raised from the soil are deficient in iodine. The normal thyroid gland stores about 25 mg. of iodine. Marine believes that the yearly requirements probably do not exceed 50 mg. In iodine deficiency, this mineral, in the form of iodized salt, may be administered. Plummer gives a few drops of compound solution of iodine once a week and feels this is adequate. Magnesium, sodium, and potassium are usually not lacking in ordinary diets. Probably the chief element to consider in the selection of foodstuffs, is calcium.

VITAMINS

Recent investigations, the first full report in 1912, have developed the fact that food of sufficient nutrients, minerals and water is not necessarily adequate to

meet all the requirements of nutrition. Thus it appears that certain substances called "vitamins" that are present in the normal dietary in infinitesimal quantities, far too small to yield any contribution to the energy supply of the body or to the bulk as structural elements of the tissues, have great importance in the body's nutritional functions. It is not surprising that popular experience of nutritional agencies which function in such minute quantities are consumed unconsciously in every adequate diet.

In recent years, much advancement has been made in the knowledge of vitamins, both as to their chemical characteristics and their biological action. Even though a greater part of this knowledge is the result of animal experimentation, it is now possible to make practical application of it in human nutrition. For many years, it has been known that prolonged deficiency of certain vitamins from the dietary hinders the growth of young animals and may be the cause of various diseases in adults. Also, certain human diseases are known to be due to the absence of one or other of the vitamins.

The principal functions of vitamins in human nutrition are:

1. To promote and maintain health and optimal growth.
2. To prevent or cure deficiency diseases.

A deficient intake of one or more of the vitamins does not always result in a specific disease, but it may bring about changes of specific structure which make for inevitable susceptibility to a latent deficiency disease.

Although Vitamin A may not hold the direct controlling relation to any one disease that Vitamin B holds to beriberi and

Vitamin C to scurvy, yet it is probable that of the three, Vitamin A is a factor of greatest practical significance in nutrition and health, because so many of our staple foods are poor in Vitamin A, and because the dietary low in this vitamin, causes a poor condition in nutrition and increases susceptibility to many infectious diseases.

It has been found repeatedly by many investigators and in many different species, including man, that a diet poor in the fat-soluble Vitamin A leads to weakness in many respects. Not only the eyes, but the appetite, the digestion, the air passages, the lungs, the bladder, the skin, the sinuses, and the ears are likely to suffer when the food is poor in respect to fat-soluble Vitamin A.

Since the animal can store Vitamin A in relatively greater proportion than Vitamin B or C, and since the effects of a shortage of Vitamin A are less specific and more widespread, the results of experiments with Vitamin A have, in many cases, given confusing results, and failed to correct interpretations. Because of these facts the great importance of this vitamin has not been fully appreciated. We now have good reason to believe that a surplus of Vitamin A in the body is not simply a reserve to be used at some future time, but that it actually increases the vigour and the ability of the body to resist disease.

Apparently neither the liver nor the body as a whole ever store enough Vitamin B to meet the requirements of nutrition for any considerable length of time without receiving new supplies of it in the food.

Almost before the novelty of the dual nature of the B-complex had subsided, studies of highly purified fractions ir¹

cated the possibility of several other components in the complex, although eventually they may be shown to be identical.

Within the last two years, rapid advance has been made in the knowledge of the chemical nature of Vitamin C. Crystalline material has been obtained from concentrated lemon juice and orange juice, which exerts a powerful anti-scorbutic action on experimental animals. The fresh cortex of the suprarenal gland has been shown, also, to be a most potent source of anti-scorbutic factor. Karrer and associates claim that the crystalline preparations are an organic acid called "ascorbic acid," although there is some hesitation in identifying it with Vitamin C. It appears that from the chemical studies of Vitamin C an explanation of the mechanism of protection against scurvy may be forthcoming. We have gained a much clearer understanding of the anti-scorbutic foods, particularly the relation of various processes and method of preparation to which they are subjected. Unusual interest attaches to the relation of Vitamin C deficiency to the health of the teeth.

A great deal of interest has been stimulated regarding the possible function of Vitamin D in regulating the absorption and metabolism of the bone-forming elements, calcium and phosphorus.

The discovery of Vitamin E is of practical importance to those engaged in the breeding of rats for experimental purposes. A number of workers are at present doing clinical investigation on human fertility. The only reports are those of Vogt-Moller, who have treated two women who had experienced four and
? some previous miscarriages, with wheat

germ oil. In both cases a successful pregnancy occurred.

It has been shown that Vitamins A, B, C, D, E and G are valuable for normal growth and health at all ages. They are particularly valuable to children. Their importance in the field of nutrition begins with pregnancy and lactation.

The clinical features of deficiencies or absences of vitamins, some of their excellent sources, and artificial concentrates known thus far, are presented for review, in the vitamin chart (Table 1).

SUFFICIENT CALORIES FOR ENERGY REQUIREMENTS

Sufficient calories for energy requirements of the body are supplied by food which contains: (1) Carbohydrates, mostly vegetable in origin, sugars, grains, starches, cereals, and fruits; (2) protein, mostly animal in origin, meat, fish, eggs, milk and cheese, and (3) fat, partly vegetable, as olive oil and cotton-seed oil, and animal, as butter and lard.

Full appreciation of the importance of calorie value of foodstuffs dates back to Rubner. Actual determinations in the calorimeter have considerable variations, but for clinical purposes, considering material actually absorbed and utilized, we can use the calorie value of four calories for each gram of carbohydrate and protein, and nine calories for each gram of fat. Sufficient calories for the normal healthy adult are dependent on the manner in which each patient reacts to a given diet. With the development of the modern machine-age which has relieved hard physical exertion, the demand for a large caloric intake is lessened, but there is a greater need to emphasize the use of fruits and vegetables, to make up adequate bulk.

Table I

<i>Vitamin</i>	<i>Clinical Features of Deficiencies or Absences</i>	<i>Found in</i>	<i>Artificial Concentrates</i>
A Anti-infective Fat Soluble	Retardation of growth and development Diminished resistance to infection Failure of appetite and digestion Possible sterility due to failure of ovulation	Milk, cream, butter, eggs, liver, fruits, green vegetables, as cabbage, lettuce, peas, carrots, spinach and tomatoes	Halibut liver oil Cod liver oil Carotene
B₁ (or F) Anti-neuritic Water Soluble (less heat labile)	Impairment or loss of appetite Disturbed digestive processes Impairment of growth in lactation period May produce amenorrhea Beriberi or polyneuritis (nerve disease)	Fresh fruit juices, egg yolks, most vegetables, especially beans, peas, spinach and tomatoes; milk; whole grains or cereals	Brewer's yeast Wheat germ Rice polishings
B₂ (or G) Anti-pellagic Water Soluble (more heat labile)	Pellagra and pellagra-like conditions	Glandular organs, liver, kidney, spleen, lean meats; vegetables as beet green, potato, spinach, turnip, greens; eggs, milk	Brewer's yeast
C Anti-scorbutic Water Soluble (heat sensitive)	Scurvy Decalcification of bones Decay of teeth Loosening and shedding of teeth	Citrus fruits, as orange, lemon, and lime; raw vegetables as tomatoes, lettuce, peas, cabbage and spinach	Orange juice Lemon juice Fresh cortex of suprarenals
D Anti-rachitic Fat Soluble	Rickets (bone disease) Faulty absorption of calcium and phosphorus in the body Defects in teeth (caries, poorly calcified teeth) General muscular weakness and instability of nervous system	Milk and egg yolks	Ultra-violet light Cod liver oil Tunafish liver oil Irradiated ergosterol Halibut liver oil
E Anti-sterility Fat Soluble (heat stable)	Failure in reproduction	Fresh meat; green vegetables; whole wheat; milk fat	Wheat germ oil

WATER

The water in the body is derived from three sources: (1) by the fluids taken (water, beverages, milk, tea, coffee or soup); (2) by the water contained in solid foods, and (3) by the water produced in the body as a result of the oxidative processes of metabolism.

The functions of water are primarily based upon its usefulness as a solvent. It aids the digestive fluids in the absorption of food. It is a valuable adjunct in transporting soluble substances in the blood and lymph. It aids in the excretion of soluble waste products of the body. Water keeps the materials in the tissues in solution so that chemical reactions can take place, and also maintains the proper dilution of salts in the tissues. The body temperature is regulated by water. Removal of excess heat is accomplished by evaporation of water from the body surface.

Water is excreted from the body by the kidneys in the urine, by the lungs as water vapour in the expired air and by the skin as sensible and insensible perspiration.

We suggest that from six to eight glasses of water be taken daily. This amount is variable, depending upon the fluids ingested from other sources, as well as the activity of the individual and the temperature of the environment. There is no objection to drinking water with meals provided it is not used to mechanically wash down the food. Large quantities of ice water inhibit digestion and are to be avoided.

THE ESSENTIAL REQUIREMENTS FOR ALL DIETS

The essential requirements all diets must possess, in order to be adequate and

protective to maintain health, have been briefly discussed. In table II, foods are presented including the protective foods that serve as a basis to meet these essential requirements.

Table II

Foods that serve as a basis to meet essential requirements:

- 1. Milk 1 pint
- 2. Egg One
- 3. Vegetables 3 large servings besides potato (one a green leafy vegetable)
- 4. Fruit 2 servings
- 5. Meat, fish fowl... 1 serving (2 ounces)
- 6. Butter 1½ squares (15 grams)

These foods should serve as a basis of all diets, and, if used in the amounts suggested, will be protective and will meet all the minimum requirements, except calories. They will average approximately 80 grams of carbohydrate, 45 grams of protein, 45 grams of fat and 900 calories.

Additional foods must be chosen to make up the caloric needs, depending upon the individual problem.

An example of a typical diet for one day, incorporating the foods that serve as a basis to meet the essential requirements with additional foods added to make up the caloric needs of the average normal adult weighing 150 pounds is outlined. Whenever the demand for additional energy is required, the calories to cover this need may be supplied by simply increasing the amount of fats or carbohydrates or both.

A Typical Diet for an Average Normal Adult Weighing 150 Pounds

70 grams protein—2400 calories

Breakfast

Fruit 1 serving

Cereal (cooked)	2/3 cup
Bacon	2 slices
Egg	1 egg
Butter	2 squares
Cream, 20%	1/4 cup
Sugar	1 tablespoon
Beverage	

Luncheon

Egg (or egg substitute)	1
Potato or substitute	1 serving
Vegetable	1 serving
Salad:	
Fresh Vegetable	1 serving
Salad Dressing with oil	1 tablespoon
Bread	1 slice
Butter	2 squares
Milk	1 glass
Fruit	1 serving

Dinner

Meat	1 serving
Potato	1 serving
Vegetable	1 serving
Fruit Salad	1 serving
Bread	1 slice
Butter	2 squares
Milk	1 glass
Dessert	1 serving

DIET IN DISEASE

It is only within the last thirty years that diets have been accurately controlled and the quantities of carbohydrate, protein, and fat recorded. Even more interesting is the fact that only within the last fourteen years has attention been called to the fatty acid-glucose proportions of the three foodstuffs, carbohydrate, protein, and fat. In consequence, it readily can be seen that only today can we begin to consider how best to distribute any given intake.

The greatest fault of dietetics today is the attempt to use a stock or printed list for a particular disease applied to all

patients afflicted with the disease, irrespective of the particular needs of the individual patient.

As a simple understanding of the contents of an adequate and protective diet is the foundation essential for health, so individual dietetic education and instruction in measured diets has become the most important first step in the treatment of an increasing number of disorders in disease. Today, treatment by diet must be considered from three angles: (1) Qualitative diets; (2) estimated quantitative diets, and (3) weighed quantitative diets. In the teaching of these methods, an ever-growing part is being played by the well-trained dietitian.

Simple qualitative diet means just the omission of certain articles of food, such as restriction of sugars and starches in a mild case of diabetes. For moderate reduction of weight in simple obesity, the gross fats and carbohydrates such as butter, cream, gravies, oil dressing, pastries, table sugar, breads, and perhaps, even potatoes and rice, should be curtailed. Many patients will be fortunate enough to derive sufficient relief from such simple omission and find it unnecessary to go into further details of management.

The distinction between simple qualitative and quantitative diets is not always made clear to the patient. Such distinction must be definitely understood in all cases in which patients fail to be improved by qualitative restrictions within a reasonable length of time, or to those cases in which diet is of paramount importance in relation to the disease.

A quantitative diet is one in which any article of food eaten should be thought of in terms of calories, carbohydrates, protein and fat, and in which

the quantitative estimation of these values is imperative. No food should be eaten in unlimited quantities. Any article of food may be eaten provided it contains proportions of carbohydrate, protein or fat in amounts that can be incorporated in the total quantity of carbohydrate, protein, and fat that is allowed each twenty-four hours and does not displace any of the foods required to make the diet adequate and protective.

A quantitative diet may be estimated in simple household terms such as tablespoonfuls, one heaping tablespoonful or two level tablespoonfuls being equal to one ounce. If this method of quantitative restriction is inadequate, then one must resort to the use of a weighed quantitative diet. This necessitates the use of food scales and an accurate knowledge of the carbohydrate, protein and fat composition of food. Many patients may feel that this is a difficult task and resent the added work. It is well to caution patients needing quantitative weighed diets that successful dietary treatment cannot be achieved by a month's enthusiastic effort followed by a return to the old habits. Success depends on their acquiring a thorough knowledge of the fundamentals of dietetics, and under the physician's guidance and co-operation in developing and maintaining the new habits of food intake suitable to their individual needs. When these patients are convinced that a fair trial of weighing food is justified, they are soon astounded to find that weighing food is not so much of a task as they had anticipated. After several weeks, they are able practically to estimate their food proportions by the eye. They learn that the different foods have marked differences in weight and propor-

tion to carbohydrate, protein, and fat. Finally, they learn that it is not difficult to juggle figures and make substitutions in the diet to increase its palatability and still keep the diet adequate and protective.

With the foregoing methods of application of dietotherapy, we present in Table IV an outline of diseases in which diet is of paramount importance in treatment, and Table V the conditions in which diet is of varying importance.

Table IV

Diseases in Which Diet is of Paramount Importance:

Metabolic Diseases:

Diabetes mellitus; Gout; Overweight—obesity; Underweight—malnutrition; Nephritis.

Diseases of Blood:

Pernicious anaemia.

Diseases of Digestive Tract:

Peptic ulcer; Constipation.

Deficiency Diseases:

Food deficiency and chronic disease; Nutritional edema; Tetany-osteomalacia; Pellagra, lack of vitamin B; Beriberi, lack of vitamin B; Scurvy, lack of vitamin C; Rickets, lack of vitamin D; Simple goitre, iodine deficiency.

Table V

Conditions in Which Diet is of Varying Importance:

Diseases of Heart and Arteries:

Heart; Hypertension.

Febrile Diseases:

Typhoid; Tuberculosis; Pneumonia; Other infectious diseases.

Diseases of Esophagus and Stomach:

Gastritis; Gastric neurosis; Hyperchlorhydria; Achlorhydria and achylia; Obstructive lesions of esophagus; Obstructive lesions of stomach.

Diseases of Liver and the Gallbladder:

Cirrhosis (with ascites); Jaundice;
Gallbladder disease.

Diseases of the Intestine:

Diarrhea; Flatulence; Fermentation;
Putrefaction; Mucous colitis; Ulcerative
colitis; Diverticulosis and diverticulitis;
Sprue.

Diseases of the Blood:

Secondary anaemia.

Diseases of the Urinary Tract:

Infections of urinary tract; Calculi of
urinary tract; Oxaluria; Phosphaturia;
Uraturia.

Skin Disease

Epilepsy

Migraine

Arthritis

Pregnancy and Lactation

Dental Caries

It is impossible in so short an article to go into details of dietotherapy, but we wish briefly, to point out the basis therapeutic factors at present considered essential in relation to a few diseases.

The metabolic diseases in which diet is of paramount importance are diabetes mellitus, gout, overweight, obesity, underweight-malnutrition and nephritis.

Probably no disease deserves greater credit for stimulating sound interest and developing dietetics than does diabetes mellitus. Prior to the discovery of insulin, diet was the only form of treatment and its discovery only served to increase the importance of diet. The actual method of procedure for the regulation of diet in the diabetic patient is dependent on the severity of the diabetes and whether or not there is associated acidosis. The diet varies from a simple qualitative restriction of carbohydrates to quantitative weighed diet with or without insulin. Varied proportions of carbohydrate and

fat are used by different clinicians, some using high fat and low carbohydrate, others using high carbohydrate and moderately low fat with, of course, high doses of insulin. Most students of diabetes are fairly well agreed on the principle of protein restriction and use about 1 gm. of protein for each kilogram of body weight.

Dietary treatment in gout demands moderation in eating and drinking, and a low purine intake. In many instances, associated obesity demands reduction. Foods to be avoided are the meats, especially cellular meats such as sweetbreads, liver and kidney, broths and meat soups, as well as rich gravies and sauces, peas and beans, whole grain cereals including oatmeal; also coffee, tea and cocoa. The chief sources of protein to be used in this condition are milk, eggs and cheese.

Simple weight reduction of a few pounds usually can be accomplished by a qualitative restriction of gross fats and concentrated carbohydrates as previously mentioned. When more exact weighed dietary restriction is deemed necessary, regardless of the type of obesity, the following procedure may be carried out: First, the desired weight in the steps of reduction is set as an objective. This expected weight may be 20 to 40 pounds under the present weight. One gram of protein per kilogram of the expected weight is allowed. Eighty-five hundredth of a gram of carbohydrate per kilogram of the expected weight is allowed. The fat is then regulated in an amount to give the desired number of calories in the reduction program. Six hundred and fifty to 1,000 calories may be used. When the caloric intake is of the lower limits, it is necessary to give brewer's yeast, hali-

but liver oil and dicalcium phosphate to insure adequate protection of vitamins and minerals.

On such a program, by insuring a normal metabolizing mixture, and maintaining the régime an adequate period of time regardless of the calories given by mouth, the patients do not experience discomfort and will reduce their weight. Whenever it is possible, we prefer giving 800 to 1,000 calories in order to teach the patient better food habits.

Underweight is a term including varying degrees, from the underweight individual who is in perfect health to those who are actually emaciated as the result of starvation or disease. For simple cases of underweight, one often can gain weight by adding some of the typical concentrated foods that are high in energy value. Some cases may require careful diet supervision, emphasizing high caloric intake, high carbohydrate, moderate amounts of protein, moderately high fats easily digested with the adaptation of the bulk to allow concentrated foods.

There is a radical difference of opinion in the present-day conception of the proper diet for nephritis. In the past, the thought primarily was focused upon the kidney and the possible damage of protein and products of catabolism. As a result, the patient was told to eat no meat. Recently, the trend of thought has been toward the patient himself and the upbuilding effects of protein with greater allowance of protein.

Except during emergencies, such as chronic cases with nitrogen retention or acute nephritis, the protein should not be lower than 1 gm. for each kilogram of normal weight. There is no great difference between the types of protein in

red meats and poultry or other flesh protein. Because of the desire to reduce protein metabolism as low as possible, it is well to have a high intake of carbohydrate and less of fat because the protein-sparing properties of carbohydrates are greater than are those of fat.

In acute nephritis, for the first few days it is well to restrict protein to 20 to 25 gm. per day and the total calories to the minimum. Volhard has had very good results with a so-called "hunger" treatment. Later, one can increase the protein to 40 gm. or more. Sufficient fluids must be given to afford proper drainage, but fluids should not be forced. The Karrell milk diet often is used during acute stages, adding fruit juices with sugar if more calories are needed. Later, more starchy foods are added, but the protein is limited for a long period, although not too prolonged especially if plasma proteins are low. Of course, rigorous restriction of salt is necessary in acute cases.

In chronic nephritis, with edema, Keith advocated a diet which is very low in fluids and mineral content. The fluid intake is restricted to 700 to 1,000 c.c. daily and the salt intake from 0.5 to 2 gm. daily. There is no absolute experimental proof that a diet low in salt is indicated in nephritis that is not accompanied by edema. The average case is started on a 40 gm. protein diet. The presence or absence of nitrogen retention or of low serum protein determines the question as to the amount of protein increase that may be allowed.

The important, practical contribution of the studies of nephrosis is in the protein loss and the emphasis of the need of giving a liberal amount of protein, as much as 150 grams per day, to replace

the loss of albumen in cases of edema when the phthalein output is good and there is no increase in blood urea or other evidence of renal incompetency.

The use of liver, or of the extract derived from it, in the treatment of pernicious anaemia, introduced by Minot and Murphy in 1926, has revolutionized the outlook for the disease. Koessler and his associates have used the high-vitamin diet. Since this work, Sturges, Isaacs, and Sharp have used desiccated gastric tissue, and Conner has used both raw and desiccated gastric tissue, apparently with the same results. It is probably best to give about 200 gm. of liver a day in the average case and up to 500 gm. a day in severe cases. Calf liver is preferable to beef liver because it is more tender and less sinewy, but any mammalian or fowl liver may also be used for variety. Since this work was begun, innumerable recipes for preparing liver have been devised in an effort to increase its palatability.

The dietary treatment for both duodenal and gastric ulcer is essentially the same. Probably in no disease has standardization in the diet had more of a vogue than in ulcer. All physicians are familiar with the Sippy regimen or its modifications.

"Deficiency disease" is a term that has been applied primarily to the results obtained from feeding experiments on animals produced by the lack of one or more vitamins. Similar conditions, such as pellagra, beriberi, scurvy, and rickets have been observed in man with vitamin deficiency. Table 1 points out the vitamins which prevent these conditions. Outside of pellagra, these conditions are rare and infrequently seen in the United States. The term "deficiency disease,"

however, should include in its scope not alone vitamin deficiencies, but those conditions in which one or more of the other nutrients—carbohydrate, protein, fats and minerals—may be lacking. Defects in diet may be only slight, but when followed for a long period of time may be responsible for various degrees of illness without an associated syndrome of any definite malady. The influence of food deficiencies on chronic disease is just beginning to be appreciated. Results can be observed either due to accidental or slight omissions of the adequate or protective foods, or one may see mild complicated chronic maladies the result of prolonged one-sided diets improperly followed or outlined, such as may be used in peptic ulcer, gastro-intestinal disorders, nephritis, epilepsy, and other conditions.

In the recent World War a disease called "war edema" was extensively studied on the Continent. It was the result of greatly restricted protein and practically starvation. Today a group of patients is seen clinically who present the picture of generalized edema, perhaps with secondary anaemia, without cardiovascular renal disease, but who for varied reasons have been on a diet too low in protein and calories.

We have mentioned above that the American dietary is likely to be low in calcium. When this is combined with low Vitamin D or lessened activity of the parathyroid it may produce tetany, osteomalacia, or dental caries.

Diet plays a part of varying significance in many conditions and disorders (Tables 4-5) but the scope of this paper does not allow for their discussion.

During recent years a great deal of work has been done regarding the rela-

tion between diet and dental caries. Many have been too ready to accept conclusions of a nutritional nature as they are published without regard to the value of the methods used in arriving at such conclusions. Many hypothetical opinions have been expressed on this subject. Various investigators have conducted their research from widely different points of view and have not used the same type of animal for experimentation. This has resulted in many diverse opinions. Of the many opinions that have been given we present below what seems to us to be the most important factors to be considered that may influence dental caries.

IMPORTANT FACTORS THAT MAY INFLUENCE DENTAL CARIES

1. Environmental Factors:

- a. Oral Hygiene
- b. Micro-organisms
- c. Carbohydrate
- d. Saliva

2. Nutritional Factors:

- a. Carbohydrate
- b. Acid-base balance
- c. Mineral
- d. Vitamin

3. Heredity

4. Age

The information accumulated thus far on the relation of diet to dental caries points to the fact, at least, that an inadequate diet produces nutritional conditions that predispose in the causation of dental caries. Our knowledge of certain phases of dental caries is still debatable

and in order to have a sane viewpoint the combined interrelationship of both environmental and nutritional factors rather than the emphasis of any one factor as responsible, should be taken. Until we know the role of the many various food factors as entities in caries we should merely insist that the patient follow the principles of a normal, well-balanced, adequate diet such as we have presented in this paper.

Because of the lack of indisputable data, histological, bacteriological, chemical or nutritional, as to what determines immunity or predisposition to caries, the problems to be met in the solution of dental caries, will require the united and co-operative efforts, of not only the physician and the dentist, but of the trained biochemist, nutritionist and bacteriologist. Great strides have already been made in this group effort in certain centres. A more detailed discussion of Dental Caries is given in the author's book, "Treatment by Diet."

CONCLUSION

The essential requirements that form the basis of an adequate and protective diet in health have been briefly mentioned—an attempt is made to point out the relation of diet in health and disease. Outlines are presented to differentiate those diseases in which treatment by diet is of paramount importance and those conditions in which diet is of varying importance.

700 North Michigan Avenue.

"Nature demands that man be ever at the top of his condition. He who violates her laws must pay the penalty though he sit on a throne."

—James Gillespie Blaine.

DENTISTRY — AND SOMETHING ELSE

By HARRY S. THOMSON, D.M.D.

To do one thing well is to be distinguished; to do more than one thing well is to be a genius.

IN addition to being a good dentist, wouldn't you like to be able to paint pictures with letters—the letters of the alphabet, just the plain A B C's, and to paint these pictures so vividly that you can see a hill, "bare, save for a few tall trees, for the free winds to whisper drowsy secrets through", pictures so real that you can "hear the constant murmur of the stream over the gravelly bars far, far below, and see the washed reflection of the moon"?

This is what Dr. George Frederick Clarke, of Woodstock, N. B., has done in his little book entitled "The Saint John and Other Poems", published last December by Ryerson Press, Toronto, as one of their Chap Books. One of these poems is reprinted in full on the first page of this magazine.

Dr. Clarke is a dentist, who carries on a large practice, and still has found time to do a great many other things, and do them so well that they have brought him international fame.

Dr. Clarke was born in Woodstock, N. B., on December 29th, 1883. He attended public school and was in the Dental office of Dr. E. S. Kirkpatrick for several years before entering the Dental Department of Medico Chirurgical College, Philadelphia. He graduated in 1913, and has practised in Woodstock ever since.

His avocation was literary work, and he has had numerous short stories published in Canadian and United States periodicals. In 1914 he began work on a novel, wrote four and set them aside. Then a friend who had returned from India read the manuscript of "The Magic Road" which he liked so well that he sent it to an old school friend, Mr. George Morrison, Dramatic Critic of The London Morning Post. Mr. Morrison took it to a prominent literary agent. The book sold, its publishers bringing it out

as "their best first novel of the year". Then followed "The Best One Thing", "Thetis Saxon" and a boys' book "Chris in Canada", published by the well-known firm of Blackie & Sons. After this came several animal stories published in Toronto, New York and London.

Though doing occasional verse, Dr. Clarke did not take up seriously the writing of poetry until a little more than a year ago. Last winter, however, he completed fifty or sixty lyrics and sonnets, which a few months ago were brought out in Chap Book form by the Ryerson Press, Toronto.

Besides being an ardent salmon angler, Dr. Clarke has during the last three years uncovered several old Indian camp sites and collected many stone weapons of war and chase, which experts have pronounced pre-Columbian and priceless.

Dr. Clarke believes that one has but to want to do anything hard enough and long enough and he will achieve success. In other words, have one-tenth ability and nine-tenths determination.



GEORGE FREDERICK CLARKE

THE RECALL PLAN

By HARVEY SCHWALM, London, England

THE present-day aim is prevention. Are we doing our fair share in assisting mankind to overcome the various disorders that the future may have in store for them? If we leave it to nature to remind them when they should pay their next visit to the dentist, considerable damage and discomfort may already have occurred, and we have been shirking a responsibility.

The Recall Plan is merely an arrangement or system of seeing your patients at regular intervals. This plan is of vital importance in every stage of life. With the advancement of dental enlightenment among the masses, in the near future people will not only insist, but demand that some provision be made for their future protection.

In children, should signs of decay appear, steps can be taken immediately to correct the condition and also prevent the occurrence of other teeth from becoming involved. How often has the child been presented to us where decay has been running rampant, teeth in an abscessed condition with all the ills that accompany them? Visits at regular intervals would eliminate all this.

With adults our biggest problem is to keep the teeth and gums in a healthy condition. How can we hope to do this if we only see them once in every year or two. We all know how difficult it is to correct a condition which has been neglected for some considerable time.



HARVEY SCHWALM

The Recall Plan keeps your patients under closer observation. Conditions are met and attended to at the beginning, the treatment is more easily accomplished, the results obtained are more satisfactory, and less arduous hours are spent in a dental chair, thereby establishing greater appreciation and more confidence in your ability to render the best service.

How easy it is to convince the patients as to the efficacy of your system, particularly as you are dismissing them on their final visit. You have placed their mouths in a good condition, and therefore it is so easy to impress the importance and necessity of retaining it in that state. The majority of people have the best inten-

tions, and are very anxious to retain their teeth. When the idea is presented to them they will most gladly fall in with your suggestions and be placed on your list for recall. The small minority who have been advised and fail to avail themselves of the opportunity, must assume the responsibility for their own future welfare.

How often should we see our patients? Individuals differ somewhat, but on the average we should see them two or three times a year at the least. We all know the changes that can take place in a few months in some cases. Others would have to be seen more frequently.

When you have a slack spell or a can-

celled appointment, why not refer to the Recall List, and fill in the vacant spaces, thus saving loss of time.

Various methods can be used, one of the simplest being the card index system, with sections for each month of the year. When Mr. Blank has been completed in January, and you wish to see him in April, his card is placed in the section for April. At the beginning of each month, appointments can be sent to patients whose cards are in that month.

An honest and sincere application of these principles will be of inestimable benefit to the patient and to the operator, and will go far to aid in prevention.

15. Stratford Place, W.I.

VARIOUS ASPECTS OF DENTAL PRACTICE MANAGEMENT

By A. R. WALKER, D.D.S. (Penn.), L.D.S. (England)

*Excerpt from paper read before Australian Dental Association, Queensland Branch.
Dental Journal of Australia.*

FOLLOW-UP CARDS.—From previous remarks I have made relative to these, you must have gleaned that I am very much averse to them. *Theoretically*, they are absolutely right, but put to the test of trial and error, not so good. Undoubtedly the ideal should be to notify your patients every three or four months, and so keep their mouths in good condition.

Practically: You send out your follow-up cards couched in whatever wording you think fit so as to cause no offence to your

patients, but to let them know that you are imbued with their well-being, wholly and solely. You must be pardoned for not being clairvoyants or mind-readers, for you will find that the psychological effect upon your patients is not quite what you expected. You will find it a truism that you will offend more than you will please.

Preach "return in three months" at the chairside as vigorously as you wish, but leave it to the good taste of your patient to return of his own volition.

"The ideal life, the life full of completion, haunts us all. We feel the thing we ought to be beating beneath the thing we are."

"First be a man."

—Phillips Brooks.

DENTAL DAY AT THE MAYO CLINIC

IN a survey of dental events of 1933, there is one day that stands out pre-eminently in the minds of those who were so fortunate as to attend. That day was August 2nd, when the Mayo Clinic of Rochester, Minnesota, arranged a special dental program of unusual interest to those wishing to keep in the vanguard of our professional activities.

The program was as follows, and a perusal of it will give one a broader conception of the field of dentistry and its relation to medicine:

8:00 to 11:00 a.m.—Attend clinics at various hospitals.

11:00 a.m.—Trip through clinic.

2:00 p.m.—Plummer Hall, 14th floor.

Welcome—Dr. W. J. Mayo.

Dr. Alfred W. Adson—"Diagnosis and treatment of trigeminal neuralgia." Illustrated by slides and motion pictures.

Dr. C. H. Watkins—"Blood diseases and their oral manifestations."

Dr. C. M. Higgins—"Experimental studies of the effects of radiant energy and diet on the parathyroid glands and calcium metabolism."

Dr. John S. Lundy—"Anesthesia."

Dr. E. C. Stafne—"The significance and insignificance of certain radiodontic findings."

Dr. Louie T. Austin—"The dental penetrometer in dental diagnosis."

Dr. Boyd S. Gardner—"Pre- and post-operative considerations in extraction of teeth."

6:00 p.m.—Buffet Dinner, Hotel Kahler.

Dr. Boyd Gardner, on behalf of the Mayo Clinic, acted as host on this occasion and supervised all arrangements in a most gracious and efficient manner.

EMPIRE DENTAL MEETING

THE British Dental Association is planning an Empire Dental Meeting to be held in London next year (1936). The suggested date is the last week of July, so that delegates can proceed to the International Dental Congress in Vienna. The British Council is ac-

tively engaged in the preparation of a provisional program for submission to the affiliated Association, and it is hoped that these Associations will arrange for a representative attendance of their members.

"Who does the best his circumstance allows does well, acts nobly, angels could do no more."

—Young.

Editorial

Editor—M. H. GARVIN, Winnipeg.

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ALBERTA	John Clay, 901 Southam Bldg., Calgary
BRITISH COLUMBIA	J. S. Bricker, 1513 Medical-Dental Bldg., Vancouver, B.C.

THE COMING CRISIS IN DENTAL PRACTICE

Are many thousands of Canadians, perhaps millions, receiving no dental care at the present time?

Are many hundreds of dentists practically unemployed, or having very little of their time profitably occupied?

Is the stage set for health insurance or State Dentistry?

Is the Canadian Dental Association prepared to deal with these problems efficiently?

These are pertinent questions at this time, and call for the careful consideration of every dentist in Canada.

The Report of the U.S. Committee on the Costs of Medical Care states that 79 per cent. of individuals receive no dental service during an average year. The proportion of the population who do not receive systematic and sufficient dental care is considerably greater than 79 per cent.

The significance of these figures, states the Report, is found when we go behind the general averages. If individuals instead of families are considered, only 10.1 per cent. of persons in families with incomes under \$1,200 receive any kind of dental attention during the year. For those with family incomes of \$1,200 to \$2,000 the percentage receiving dental care is only 15.5. In the \$2,000-to-\$3,000-income group the percentage rises only to 21.4,

whereas for the \$5,000-to-\$10,000-income it is 40.6 and for the group with incomes of \$10,000 and over it attains a peak of 59.6 per cent. Undoubtedly a certain proportion of persons secure care only for relief of pain, or other dental emergency.

Probably 60 per cent. of the amount expended annually for dental services comes from the 25 per cent. of the population with incomes of \$3,000 or more. While it is admitted that a lack of popular appreciation of the value of systematic dental care is one of the reasons why dental service is not obtained, the economic deterrent is probably a more important obstacle.

As these statistics were for the prosperous years of 1928-29, conditions are obviously much worse now.

Certainly no solution to the problem of dental costs can be reached through a reduction in the average dental income.

Dentistry has a vital stake in this great problem and ample reason for making every effort towards its solution.

Health insurance was inaugurated in Germany by Bismarck in 1883. The scheme now takes in 40,000,000 beneficiaries in Germany out of a total population of 63,000,000. At the present time the Government service engages 35,000 physicians out of a total of 50,000. Following Germany's example, health insurance has spread to 40 countries, including every nation in Europe except Italy.

It does not require a prophet to read the handwriting on the wall and to be able to say with much assurance that the dental profession of Canada will be faced very soon with the question of co-operating with government officials in drafting a plan for some kind of national dental health service.

Dr. W. W. Charters, a distinguished graduate of McMaster University and now director of educational research at the Ohio State University, speaking in Hamilton, Ontario, recently, stated that state medicine was not only coming, but was already here. Few would favour leaving education to private efforts, and if education was a state function, said the speaker, why not health? It was for the medical profession to find out the best form of health service.

Obviously the dental profession faces a similar crisis, but state dentistry is not the only way to solve this problem. There may be better ways, but whatever the way, the dental profession should assume control.

This undertaking may be dealt with by the individual provinces, but we submit that if one province passes a law seriously jeopardizing the status of dentistry, there will be an unfavourable impact upon all of the other provinces.

A well organized national dental association is the only logical body to deal with this emergency as far as dentistry is concerned, if health insurance is to come upon the stage. Even in a strictly provincial undertaking, our

Canadian Dental Association should be in a position to throw the influence of the four thousand dentists of Canada into the field to assist the local organizations in dealing with a question that eventually will be national in scope.

Are we going to fiddle while Rome burns, or are we going to give the Canadian Dental Association of our time and of our resources, in its sincere effort to so mobilize our latent forces as to be able to deal effectively with all such problems as they arise?

"Be not deceived; God is not mocked; for whatsoever a man soweth, that shall he also reap."

A PRACTICE STABILIZER

In this number of the *Journal* will be found two articles on "The Recall Plan" in dental practice, one by Dr. Schwalm, a prominent Canadian dentist who moved to London following the war, and the other a reprint from the Dental Journal of Australia expressing the views of Dr. A. R. Walker.

These two papers express very clearly the opposing views in regard to this plan. The editor is of the opinion that a well-organized recall list is not only one of the greatest benefits to our patients, but is also one of the greatest practice builders and practice stabilizers that we have at our command. After many years' experience, his enthusiasm for this service has steadily increased, and as far as can be determined the patients have been most appreciative.

Further comment on this vital question would be welcomed for publication.

In the near future it is expected that a section entitled "Round Table Conference" will be added to the *Journal*. Our readers are invited to contribute to this section by presenting their successes and also their problems, which will be dealt with as faithfully as possible.

THE MIGHT OF LITTLE THINGS

"A pebble on the streamlet scant
Has turned the course of many a river;
A dewdrop on the baby plant
Has warped the giant oak forever."

In the January issue of the *Journal* a mere asterisk before the name of our distinguished Past-President, *Dr. G. F. Bush*, of Winnipeg, placed him among the deceased instead of the living. While this particular item did

not pass through the editor's hands, he is willing to assume the responsibility and does most sincerely apologize to Dr. Bush for this error. This highly esteemed and pioneer dentist of Western Canada has influenced the thought of the dental profession during the 46 years that he has been in practice in Manitoba. He is still in active practice in the City of Winnipeg. He is also active as a beloved organist in one of our Anglican churches. We trust that he may still be spared many years to carry on his work among us.

A corrected list of past-presidents will include also the name of Dr. George Kerr Thomson, the distinguished dean of the dental department of Dalhousie University. We regret this omission.

BOOK REVIEW

TREATMENT BY DIET, by Clifford J. Barborka, B.S., M.S., M.D., D.Sc., F.A.C.P.; Department of Medicine, Northwestern University Medical School, Chicago; Formerly consulting physician, the Mayo Clinic. (615 pages, cloth \$5.50). Published in 1934 by J. B. Lippincott Co., 525 Confederation Building, Montreal.

* * *

The purpose of this book is: first, to present a concise, practical and systematic method of prescribing diet and applying treatment by diet to health and disease; second, to aid in teaching the individual patient how to make a selection of the proper amount and type of food that has been prescribed for him.

The author has purposely omitted lengthy accounts of theories, but has incorporated the most widely accepted ideas of other men in the various fields of nutrition.

The first twenty-four pages deal with "Diet in Health." By means of food tables, vitamin charts, and a sound

analysis of what constitutes essential requirements for all diets, Dr. Barborka pictures the normal regimen for the individual in health. He urges the inclusion of a generous amount of vegetables, fruits and milk, for a well-balanced diet.

The following fifteen pages are concerned with the Application of Dietotherapy. There are six full-page photographs showing comparative servings, which should prove an excellent method of teaching the patient to visualize definite portions and servings of foodstuffs.

Part III comprises the major portion of the book and requires nearly five hundred pages, dealing with Diet in Disease. There are innumerable charts and suggested diets for diseases in which diet is of paramount importance; that is, metabolic diseases, diseases of the blood, and deficiency diseases. The nature of each disease is briefly described, the object of the diet is stated in a simple, clear form, and then directions are given for application of the diet. The menus are so numerous and so exact as

to detail, that no misunderstanding should arise.

There is one short chapter of eleven pages on Dental Caries, in which there is an accumulation of facts regarding the achievements in research in this field of endeavor, expressed in a very complete manner. The conclusion is that the information, amassed thus far on the relation of diet to dental caries, points to the fact, at least, that an inadequate diet produces nutritional conditions that predispose in the causation of dental caries, and that the problem requires not only the co-operative efforts of the physician and dentist, but also of the trained biochemist, nutritionist and bacteriologist.

This is a book which should find its

way into the library of every dentist who is interested in diet from the standpoint of his own and his family's health, as well as the health of his patients.

Too often we hear in these days that the medical profession does not stress sufficiently the importance of diet in the problems of health and disease, and we see a slipping away of many to the quacks and the cults of various kinds.

Here we have a most detailed study of dietary problems, so clearly presented that one obtains the proper conception of the relation of diet to health and disease.

The paper which Dr. Barborka presented at the Annual Fall Clinic of the Montreal Dental Club appears in this issue of the *Journal*.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

Legal Decisions in British Columbia—Rex vs. The School of Mechanical Dentistry Limited. The School of Mechanical Dentistry Ltd. was charged in the Vancouver Police Court, Feb. 3rd, 1934, with unlawfully practising dentistry. After many adjournments this case was tried by Magistrate McQueen, before whom it was proven that the School of Mechanical Dentistry Ltd. was guilty of practising dentistry contrary to section 71 of the Dentistry Act. A fine of \$25.00 and costs was imposed.

A second charge was laid against the School of Mechanical Dentistry Ltd. Magistrate McQueen dismissed the case. The Council of the College of Dental Surgeons of British Columbia appealed the decision on Oct. 30th, 1934.

The judge held that the school indirectly obtained the taking of the impression and completed the case for a fee in contravention of the Dental Act. His lordship stated further

that he was under the impression that this was a deliberate attempt to evade an act which was well known; in other words to try to sail as near the limit of the law as possible without overstepping it. That being so, the Judge stated that it should be dealt with more severely than if it were merely something done without knowledge, because the public ought to be protected, not only in their general health under the medical acts but also under the Dental Act. He imposed a fine of \$200.00.

ALBERTA

The *Calgary Albertan* reports on November 24th that the Provincial Minister of Health told the convention of Alberta Municipal districts that in his opinion the public health was next in importance to the public finance. The suggested plan of health insurance would, he explained, cost about \$24.00 per earning individual, of which two-ninths would

be paid out of the general revenue of the province, two-ninths by each earning individual, and five-ninths by each employer.

The executive of the Western Canada Dental Society met in Calgary in November and outlined plans for the Convention to be held in Calgary next June. The dentists of Manitoba, Saskatchewan, and Alberta will participate. It is hoped that British Columbia also will find it possible to co-operate.

The *Lethbridge Herald* stated on November 17th that the farm women of South Alberta, in conference at Lethbridge, went on record as being in favour of State medicine and of action being taken as soon as possible.

SASKATCHEWAN

The Collegiate board members of Regina are seeking to have the medical, dental, and optical services of the public schools extended to the city's secondary schools.

MANITOBA

A new series of radio talks about preventive dentistry was begun in November by the Canadian Foundation for Preventive Dentistry. This organization is a group of lay and professional men who are working under a Dominion Charter, with headquarters in Winnipeg. The Foundation is trying by various means to tell the story of preventive dentistry, and is receiving the enthusiastic support and co-operation of the Canadian Red Cross, the Junior Red Cross, the Canadian Dental Hygiene Council, the Manitoba Dental Association and the Department of Health and Public Welfare of the Provincial Government. The Foundation also organizes and sends out travelling dental clinics to the outlying districts of Manitoba. The clinic service is limited to children, but about eight thousand school children have passed through these travelling clinics in the past two years. Many of the districts visited are one or two hundred miles from either dentist or physician and few if any of the 8,000 children taken care of would have received any dental attention but for the clinics sent out by the Canadian Foundation for Preventive Dentistry.

ONTARIO

Farewell to Dr. Amy. Over one hundred of Dr. Amy's Dental friends and confrères gave him a farewell dinner and presentation at the Granite Club on December 17th. Representatives came to Toronto for the occasion from Hamilton, London and St. Catharines. Dr. Jack McMulkin, chairman, with Dean Wallace Secombe and Dr. R. T. McDonald, of Hamilton, spoke of Dr. Amy's Dental career of 35 years in eulogy and expressed the good wishes of those assembled, for his new venture. Dr. Amy proposes sailing for England, where he expects to spend six months in study in Guy's Hospital. On completion of this period he hopes to locate in the Motherland. His plans after his course in Guy's Hospital, however, are indefinite as yet, and he may still come back to Canada.

During the dinner, Dr. Ross Thomas presented Dr. Amy with an illuminated address signed by all present and a gold pocket watch suitably inscribed. These tokens of esteem and goodwill were graciously received by Dr. Amy in a characteristic address.

Members of the profession in Canada as well as Ontario, who know Dr. Amy, will join with Toronto in wishing him Good Luck and God Speed.

Dr. Fred Conboy, of Toronto, formerly Director of Dental Services in the Ontario Department of Health, has been elected alderman of Ward Six, polling the largest vote of any alderman-elect. The Canadian Dental Association congratulates Dr. Conboy upon this notable achievement.

Dr. Jacob A. Neelands, of Lindsay, celebrated his 96th birthday on November 9th. He opened his dental office in Lindsay the year before the Civil War in the United States, and retired only six years ago.

Dr. J. A. Lambertus, of Eganville, has been elected president of the dental association of Renfrew County.

Dr. J. L. Austin, speaking in Kingston on November 23rd, stated the belief that state medicine would surely come. Scientific medicine was largely public health, he said, and

its work would deal with the race rather than with the individual.

Dr. G. C. Bonnycastle, of Bowmanville, has been elected president of the Durham-Ontario Dental Association.

Dr. J. H. Trevin, of Collingwood, has been elected president of the Simcoe Dental Association.

At a meeting of the Royal College of Dental Surgeons, held on December 12th, the following were elected or acclaimed to the board of directors:—

District 1—Dr. W. H. Woodrow, Brockville, also President of the Ontario Dental Association; *District 2*—Dr. H. Irvine, Lindsay; *District 3*—Dr. G. E. Blatchford, Port Arthur; *District 4*—Dr. E. C. Veitch, Toronto; *District 5*—Dr. G. H. Holmes, Owen Sound; *District 6*—Dr. R. T. MacDonald, Hamilton; *District 7*—Dr. G. L. Prestein, Galt; *District 8*—Dr. L. D. Hogan, Walkerville.

The *Toronto Globe* states that the Hon. Dr. J. A. Faulkner, Minister of Health, is in favour of establishing medical, dental, and optical services throughout Ontario for secondary school pupils whose parents are not in a financial position to provide the necessary attention.

Dr. Alan Brown, Physician-in-chief of the Hospital for Sick Children in Toronto, in a recent radio address, made a plea for financial support, amounting to about three cents a year for every Toronto citizen, for the establishment and support of health clinics for children of pre-school age. It was pointed out that many serious physical defects and diseases in later childhood could be prevented by early treatment for which no adequate provision was at present being made.

The *Toronto Globe* stated, on December 19th, that within three months an organization to provide medical, dental, and optical attention for Ontario civil servants and their families will be in operation, with an initial group membership of between 300 and 500.

Under the plan, each adult will be called upon to pay a fee of \$2.00 per month, and each child under sixteen in a civil servant's family will be enrolled for \$1.50 per month.

A new medical plan is being worked out by civil servants in Ontario to provide for medical and dental care, complete hospitalization up to a limit of three months, on a semi-private scale, X-ray, anaesthetic and operating-room costs to be included. Dental services will be restricted to semi-annual inspection, ordinary fillings, extractions and dental surgery up to a total of \$15.00 yearly.

QUEBEC

Dr. Jonathan Meakins, physician-in-chief of the Royal Victoria Hospital of Montreal, stated before a local women's club, according to the *Brantford Expositor*, that the North American continent was twenty years behind Great Britain and the leading European countries in looking after the health of the people. Holding that the health of the people should be the responsibility of the State, Dr. Meakins advocated a scheme of social insurance for Canada which would have to be Federal if it was to reach all the people.

NEW BRUNSWICK

The Moncton school dental clinic is sponsored by five service clubs of the city, and the clinic provides for the care of school children whose teeth would not otherwise receive attention.

The first monthly meeting of the Saint John Dental Society met late in November. A feature of the meeting was an address by Dr. R. A. H. McKeen, provincial pathologist, who spoke on revolutionary developments and discoveries in the field of bacteriology during the last ten or fifteen years.

NOVA SCOTIA

The regular dinner meeting of the Halifax Dental Society was held on December 6th, Dr. Hennigar presiding. H. S. Crosby addressed the members on "A Summary of Dental Ethics". J. Stanley Bagnall and A. Borden Haverstock spoke on "Children's Dentistry".

NEWS FROM THE EMPIRE

SOUTH AFRICA

The South African Dental Association is being incorporated, which will remove the responsibility of individual members and place it upon the Association as a whole.

GREAT BRITAIN

Last year the membership of the British Dental Association was 4,449.

GENERAL NEWS

In December a Dental Centennial was held in New York, celebrating the hundredth anniversary of the first dental society of the world. Besides the usual program of scientific and historical exhibits, a pageant was staged by both amateur and professional talent, which was both instructive and educational.

The custodians of the Relief Fund of the American Dental Association, during the past ten years, have distributed more than \$100,000 to indigent members of the Association. This relief has been carried on from an average yearly per capita contribution from the members, of about forty cents.

—*Dental Digest.*

The *Journal of the American Medical Association* states on December 15th that the American Association for Labor Legislation is apparently circulating a letter asking those to whom it is addressed to send telegrams immediately to the Secretary of Labor and the President, urging immediate action on the subject of health insurance. They are not waiting for the report of the President's Committee on Economic Security, but desire immediate legislation, regardless of the economic situation of the country as a whole or of any other important factors that may be involved. Haste for such sound legislation must inevitably lead to errors and result in harm to both the public and the medical profession.

OBITUARIES

MELVIN AKINS, Ottawa, Ontario, died on November 29th at the home of his brother. Dr. Akins had been working up till the night before, and his death came as a shock to a wide circle of friends. He was unmarried and in his 41st year.

WILLIAM JOSEPH MOONEY, of Regina, Saskatchewan, died on November 26th in his 45th year. He was stricken in Chicago with a heart attack while en route to visit his aged father and mother in Ontario. He was past-president of the Saskatchewan Dental Association.

J. A. CLAUDE DOIRON, of Moncton, N. B., age 36. The deceased succumbed to an attack of pneumonia. He served overseas with the Canadian Field Artillery in the Great War. He was also a musician of note.

H. M. REID, of Melville, Sask., died at his home on Nov. 9th. An obituary notice will appear in the March number of our JOURNAL.

JOSEPH B. PENTLAND, of Peterboro, Ontario, died on November, 19th in his 82nd year, having practised here for 65 years. He was a man of amazing vitality, having hardly known a sick day throughout his life, and was an outstanding sportsman.

SILVESTER MOYER, of Rockglen, Saskatchewan, died suddenly of heart attack on December 2nd. An obituary notice will appear in the March number of our JOURNAL.

D. KAPLANSKY, of Montreal, died Dec. 9th after an illness of five years. He was thirty-two years of age and a graduate of McGill University.

Section Française

A PROPOS DE L'ACTION DE L'ERGOSTERINE IRRADIEE PLUS PARTICULIEREMENT AU POINT DE VUE DE LA DENTITION

PAR LE DR. PIERRON

*Ex-assistant d'électroradiologie des hôpitaux de Paris. Professeur suppléant à l'Ecole de
chirurgie dentaire et de stomatologie de Paris.*
—Paris Medical, 4 août 1934.

Pour obtenir une bonne calcification dentaire, il est nécessaire d'adjoindre à l'ergostérine irradiée une ration suffisamment riche en phosphore.

L'ACTION de l'ergostérine irradiée sur le métabolisme du calcium est un fait actuellement bien établi, aussi nous semble-t-il tout à fait inutile de reprendre pour notre compte l'exposé de cette question, que l'on peut considérer comme au point, du moins pour ce qui est du rachitisme, où nul ne songe à discuter l'opportunité de l'administration de l'ergostérine irradiée.

Cependant un doute subsiste encore sur le parallélisme absolu entre l'action de l'ergostérine irradiée et celle des rayons ultra-violets appliqués directement au malade dans les cas de croissance défectueuse, d'amoindrissement du tonus musculaire, d'anémie et autres manifestations sur lesquelles il est généralement admis que l'irradiation directe est utile. La question de l'adjonction à l'ergostérine irradiée de corps destinés à en compléter les effets thérapeutiques, calcium, phosphore, arsenic, fer, n'est pas encore, non plus, tout à fait jugée.

Notre intention n'est pas de reprendre ici la question par son côté théorique ou bibliographique, mais de signaler simplement les résultats qui ressortent d'un grand nombre d'observations que nous avons recueillies, depuis plus d'un an, sur des enfants de trois à douze ans, auxquels nous avons donné nos soins en raison des troubles dentaires qu'ils présentaient.

Nos observations antérieures, et les multiples travaux que nous avons lus sur cette question, nous avaient conduit à admettre que l'ergostérine irradiée donne, d'une façon très générale, des résultats meilleurs lorsqu'elle est accompagnée de phosphore. Nous avons retenu ce précepte d'Armand-Delille qu'il est inutile de donner du phosphate de chaux aux enfants, en vue d'obtenir la fixation du calcium, si on ne leur donne en même temps de l'ergostérine irradiée et, renversant la proposition, nous nous sommes demandé si l'ergostérine irradiée

ne doit pas, elle aussi, pour développer toute son activité thérapeutique, être administrée avec du phosphore, élément qui accompagne toujours le calcium vital, le calcium circulant dans l'organisme. Pour la chaux, nous savons que l'alimentation normale en apporte toujours des doses suffisantes et que, seul, le problème de sa fixation se pose pratiquement dans les états de déficit calcique. Rappelons ici, en passant, que, selon Hooper, un nourrisson de 7 kilogrammes a un besoin journalier de $O.^{gr}10$ à $O.^{gr}15$ de calcium; un enfant de six ou sept ans, selon Matz, de $O.^{gr}20$ à $O.^{gr}30$, et un enfant de quatorze ans de $O.^{gr}40$ à $O.^{gr}60$ suivant Sherman; et rappelons que le lait de femme renferme $O.^{gr}35$ de calcium par litre, et qu'un nourrisson normal en absorbe un litre vers la vingthuitième semaine. Quant au lait de vache, il est encore beaucoup plus riche, puisqu'il ne renferme pas moins de 1 gr, 45 de calcium par litre.

La ration d'équilibre calcique, chez l'enfant, peut donc, en définitive s'établir entre les chiffres de $O.^{gr}10$ à $O.^{gr}15$ pour le nourrisson; $O.^{gr}20$ à $O.^{gr}60$ pour l'enfant de six à quatorze ans. Cette dose de calcium se trouvant facilement dans l'alimentation normale, la question du déficit calcique est toute liée à son assimilation et à sa fixation, les insuffisances de l'une et de l'autre se traduisant par des troubles squelettiques et, en tout premier lieu, par des troubles au niveau du système dentaire.

Pour cette raison, nous estimons que l'état de la denture peut être considéré comme un excellent test de la recalcification, et c'est sur ce test que nous nous sommes surtout basé dans l'étude de la médication recalcificatrice, sans laisser de

côté, pour cela, les autres modifications favorables, du côté de l'accroissement de la stature et de l'état général.

Nos sujets d'observation ont donc été des enfants présentant des caries dentaires multiples ou des retards dans l'évolution dentaire. Nous avons pu nous convaincre que l'ergostérine irradiée est un recalcificateur puissant de la dent, dont l'activité est encore beaucoup augmentée par l'adjonction d'un phosphate organique, comme cela est réalisé par certaines préparations telles que le Fortossan irradié. C'est surtout et presque exclusivement cette préparation que nous avons administrée. Nous faisons suivre ce traitement, d'une façon générale, d'une cure de Phytine.

Rappelons que la Phytine est un inosito-hexaphosphate double de chaux et de magnésie; le Fortossan, un inosito-hexaphosphate de soude en mélange avec une certaine proportion de lactose. Le Fortossan irradié est le même produit auquel a été adjoint de l'ergostérol irradié à la dose de $O.^{mgr}4$ par cuillère à café, et cela par un procédé qui permet d'éviter complètement les inconvénients des solutions huileuses d'ergostérol, dont l'usage est assez désagréable et détermine, parfois, certains troubles d'intolérance. Avec le Fortossan irradié, nous n'avons jamais observé la moindre intolérance digestive, même au cours des traitements les plus longtemps continués.

Nous prescrivons généralement aux jeunes enfants deux à trois cuillères à café par jour de Fortossan irradié, pendant quinze jours, puis Phytine, deux cachets par jour. Les résultats peuvent se résumer ainsi:

Du point de vue dentaire: Eruption

rapide des dents en retard; absence de récurrence des caries, après traitement de celles qui préexistaient. Il s'agissait, pour la plupart, d'enfants observés régulièrement chaque année et chez lesquels de nouveaux points de carie s'observaient rapidement lorsque les anciens étaient obturés. Après le traitement au Fortossan irradié, ces enfants n'ont plus présenté de caries nouvelles.

Du point de vue général: Nous avons observé presque toujours, un relèvement rapide de l'appétit suivi d'une croissance pondérable notable et d'une amélioration de l'état général marquée par plus de vivacité physique et intellectuelle, un faciès plus coloré et plus animé.

Voici, à titre d'exemple, quelques-unes de nos observations:

ANDREE R . . ., six ans et demi: huit obturations faites sur dents de lait l'année précédente, présente quatre caries nouvelles sur dents de lait. Les deux dents de six ans inférieures, incomplètement évoluées, sont déjà profondément cariées. Les deux dents de six ans supérieures sont absentes. Traitement des caries et mise au Fortossan irradié et à la Phytine.

Après huit mois, aucune carie nouvelle. Toutes les dents de six ans ont terminé leur évolution.

FRANCOISE P . . ., neuf ans. Dix caries précédemment traitées, huit caries nouvelles dont les quatre dents de six

ans. Deux extractions s'imposent. Traitement comme ci-dessus.

Après huit mois, absence de récurrence.

GERMAINE D . . ., quatre ans. Six caries traitées, une extraction prématurée. Six caries nouvelles, une extraction s'impose. Traitement. Après huit mois, une seule carie nouvelle, peu profonde. La dentine offre à la fraise une résistance normale alors qu'avant le traitement elle était anormalement molle.

ANGELE B . . ., douze ans. Dix caries anciennes traitées. Six caries nouvelles dont les quatre dents de six ans. Traitement. Après huit mois, pas de récurrence.

Nous n'insistons pas davantage sur nos observations; nous avons noté un grand nombre de cas, tous semblables. Le fait à retenir est que le Fortossan irradié nous a donné chez les enfants présentant des caries dentaires multiples et récidivantes, associées à des troubles généraux en relation évidente avec un déficit calcique de leur organisme, des résultats rapides et dont la constance ne permet pas de mettre en doute la relation de cause à effet avec le médicament administré. Ces enfants, pour la plupart plus ou moins amaigris, ayant peu d'appétit, peu de propension au jeu avant le traitement, se sont transformés, sous l'influence de celui-ci, devenant plus vifs, rieurs et joueurs, témoignant ainsi de l'amélioration de leur nutrition intime.

DECOLLEMENT DE LA RETINE CAUSE PAR UNE INFECTION D'ORIGINE DENTAIRE

UNE femme de 29 ans présente soudainement un décollement de la rétine de l'oeil droit.

Durant deux mois, la patiente avait éprouvé des douleurs dans son incisive latérale supérieure droite. Cette dent fut extraite quatre jours après l'apparition du trouble oculaire. Cinq jours plus tard,

la lésion de l'oeil s'améliorait. Après un mois, l'examen à l'ophtalmoscope ne révélait aucune trace de décollement.

Cette patiente guérit ainsi sans autre traitement que celui de l'avulsion de la dent infectée.

(Stomatologie—Mai, 1934.)

(J. A. D. A.—Sept., 1934.)

TRAITEMENT DU DOCTEUR MARCEL DARCISSAC POUR LES PERFORATIONS RADICULAIRES

BIEN rares sont les dentistes auxquels il n'est pas arrivé de faire fausse route en pratiquant le forage et l'élargissement d'un canal radiculaire. Ces perforations sont parfois aussi le résultat de l'évolution de la carie. La plupart du temps mal obturés, ces bris de la paroi radiculaire deviennent des foyers d'infection qui entraînent la destruction du peri-odonte et contraignent les patients à perdre ces dents.

Le Docteur Marcel Darcissac, stomatologiste à l'Hôpital Laënnec, offre un excellent moyen de réparer cette solution de continuité de la paroi radiculaire.

En premier lieu, il stérilise la lésion et obtient l'hémostase, avec l'acide trichloracétique. A la fois agent caustique agissant en surface seulement et puissant antiseptique, cet acide produit rapidement une hémostase et permet l'obturation immédiate de la lésion periradiculaire.

Comme substance obturatrice, le Docteur Darcissac emploie une pâte composée d'oxyde de zinc et de poudre d'alliage d'argent, parties égales (alliage habituel pour obturations dentaires) et d'eugénol. Cette pâte doit être de consistance assez ferme, et ses composants aseptisés par flambage extemporané. Elle n'exige pas un parfait assèchement de la paroi, pour être efficace. L'alliage d'argent mêlé à cet eugénate en accélère le durcissement.

L'obturation de l'apex du canal s'opère à la séance subséquente. Avec un foret on élève le surplus d'eugénate qui pourrait obturer partiellement le canal, on fait l'alésage de la paroi et l'on procède au remplissage du canal avec de la chlororésine et de la gutta-percha. Le Docteur Darcissac, lui, obture de préférence les canaux avec une pâte formolée. La chlororésine et la gutta rendent, à notre avis, plus facile l'obturation complète et hermétique de la région apexienne d'un

canal. De plus, de la chloropercha qui dépasserait l'apex, produirait une réaction inflammatoire moins intense et, partant, moins douloureuse que celle causée par une pâte formolée.

Le Docteur Darcissac rapporte des guérisons obtenues par cette obturation

des perforations radiculaires à l'eugénate remontant à plus de dix ans.

Nous serons heureux de lire les observations des confrères qui utiliseront ce traitement des canaux radiculaires trouvés par accident ou par la carie.

P. H.

DEUX CAS D'INTOXICATION AIGUE MORTELLE PAR LA PROCAINE

MADAME X. âgée de 37 ans, souffre d'un goitre colloïde depuis 15 ans. Depuis 2 ou 3 ans, des symptômes d'hyperthyroïdisme sont apparus qui augmentent progressivement d'intensité. Son métabolisme basal est de plus 30 et la tachycardie est aux alentours de 100, la malade au repos. Aucune lésion organique ne peut être reconnue, après tous les examens de routine dans un grand service de chirurgie.

La thyroïdectomie est entreprise en octobre dernier à l'anesthésie locale par infiltration. Une solution de procaine à 1 pour 100, préparée immédiatement avant l'opération, est injectée sous la peau, promenant l'aiguille de part et d'autre de façon à éviter l'injection intraveineuse. A peine le tissu cellulaire a-t-il reçu 20 c.c. que la malade accuse de l'anxiété et des sensations d'étouffement. Malgré cela le chirurgien continue d'injecter la quantité habituellement requise pour insensibiliser les tissus qui recouvrent la glande, environ 75 c.c. et commence l'intervention. La malade paraît plus calme. La glande thyroïde est rapidement mise à découvert. Mais à

ce moment on remarque que la malade est tout à fait inconsciente et respire lentement avec du stertor. Les battements du poulx sont accélérés mais bien frappés. L'opération est suspendue et des injections intraveineuses d'éphédrine et de coramine sont faites. La respiration devient intermittente et on pratique la respiration artificielle en même temps qu'on fait inhaler du CO_2 et de l'oxygène au moyen de l'appareil de Kollecher. L'air et ces gaz pénètrent librement dans les poumons à chaque mouvement respiratoire, mais pour faciliter davantage le réveil respiratoire on pratique une trachéotomie qui permet l'insufflation plus directe. Les battements du cœur s'affaiblissent et disparaissent, une injection de 1 c.c. d'adrenaline au 1/1000 est faite directement dans le cœur. Mais aucun réveil ne se fait ni de la respiration, ni du cœur, ni des réflexes oculaires. On continue pendant une heure la respiration artificielle sans aucun résultat.

Cette mort imprévue au cours des manœuvres à peine commencées de la thyroïdectomie nous paraît bien due à l'intoxication par cette novocaïne, phé-

nomènes d'anxiété cérébrale, puis phénomènes bulbaires: sidération puis arrêt de la respiration et du coeur. Et tout cela se rapproche singulièrement du syndrome que l'on observait autrefois lorsque la cocaïne était utilisée à haute dose ou en solution concentrée ou chez des personnes sensibilisées à cette substance.

La procaine que nous utilisons depuis 5 ou 6 ans dans presque tous nos cas de goitre ne nous avait jamais donné de ces accidents (au moins 1,200 cas) comment expliquer celui-ci? Nous ne pouvons que faire des conjectures.—Malade sensibilisée, idiosyncrasique, émotionnée par l'opération: chose possible, mais qui dénote notre ignorance et qui ne nous satisfait pas. L'enquête que nous avons faite sur le mode de préparation de la solution nous a révélé qu'elle avait été faite suivant toutes les règles de l'art. Mais il s'agissait dans ce cas d'un flacon de procaine récemment acheté par l'hôpital et ouvert pour la première fois. Pour obtenir une action anesthésique plus puissante, le fabricant n'a-t-il pas dirigé la formule de sa novocaïne vers celle de la cocaïne? Je ne puis le savoir, mais

Louis Labat, le grand expert français en anesthésie, dit quelque part dans l'un de ses ouvrages: "Si vous remarquez des phénomènes toxiques lorsque vous injectez de la novocaïne à 1% et que vous vous tenez en dedans de 150 c.c., c'est qu'il y a de la cocaïne dans votre solution." Je me rattache à cette idée.

DR. A. P.

Le lendemain, au même hôpital, on veut ouvrir un furoncle chez un vieillard dans un état de cachexie avancée.

Craignant les pastilles contenues dans le flacon de la veille, on utilise, pour la préparation de la solution anesthésique, de la procaine prise dans une nouvelle bouteille.

Après l'injection de quelques c.c. de procaine à 1%, le malade donne des symptômes de même nature que ceux décrits plus haut et trépassé en dépit des meilleurs soins.

Nous citons ces cas simplement à titre documentaire et non pas pour démontrer la toxicité de la novocaïne. Les exemples seraient mal choisis.

P. H.

UN VADE-MECUM POUR LE DENTISTE

L'ASSOCIATION dentaire américaine vient de publier un volume de plus de deux cents pages intitulé: "*Accepted Dental Remedies*".

Ce volume, s'il n'est pas destiné à remplacer les manuels de matière médicale et de thérapeutique, facilitera du moins, à tout dentiste, la connaissance des nouveaux médicaments approuvés par le

Conseil de thérapeutique dentaire de l'Association ci-haut mentionnée.

On peut obtenir ce livre pour la modique somme d'un dollar, en s'adressant à l'Association Dentaire Américaine, 212 East Superior Street, Chicago.

Les auteurs de ce louable travail méritent la vive reconnaissance de la profession dentaire.

P. H.

UN CAS DE FRACTURES BILATERALES ET COMPOSEES DE LA MANDIBULE, AU COURS D'UNE OPERATION DENTAIRE

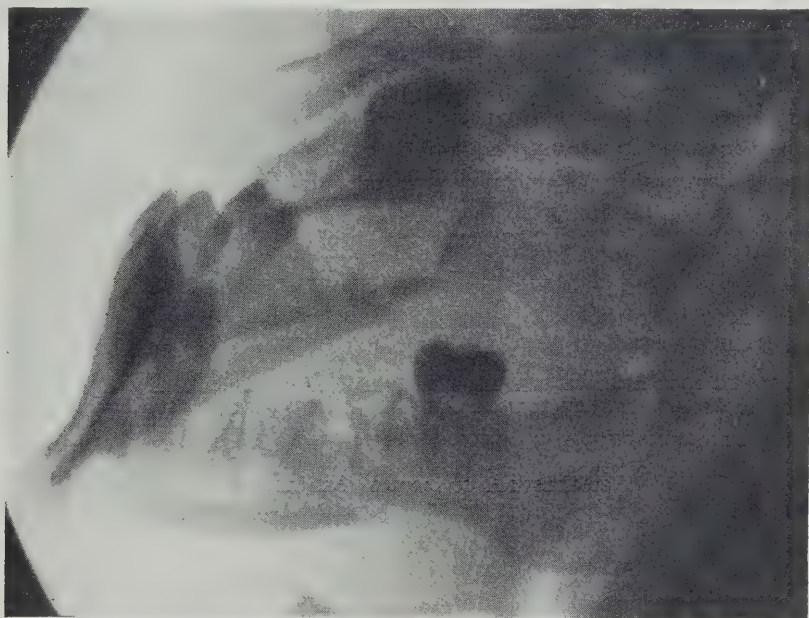
UN jeune homme de 17 ans est soumis à l'anesthésie générale au chlorure d'éthyle pour l'extraction de dents. Un médecin donne l'anesthésique, puis un dentiste opère.

Au cours de l'opération, on applique l'ouvre-bouche dans la région des incisives. A ce moment, les deux molaires de six ans ont été enlevées et les muscles constricteurs de la mâchoire sont en contraction. La mandibule affaiblie cède et se fracture à droite et à gauche dans la région des molaires de six ans, devant

la force des masséters et des temporaux résistant à la pression de l'ouvre-bouche. Evidemment, il eût été préférable d'obtenir la résolution musculaire avant de mettre l'ouvre-bouche en action. Ce jeune homme, bien que grand de taille, paraissait d'une santé frêle. Il est possible que son ossature fut atteinte d'ostéoporose.

A tout événement, la guérison s'est opérée rapidement, après la mise en place d'une attelle appropriée.

Voilà un accident regrettable et d'une extrême rareté.



Fractures bilatérales de la mandibule par l'application forcée de l'ouvre-bouche.

TROIS AIGUILLES CASSEES AU COURS D'INJECTIONS DE NOVOCAINE A L'EPINE DE SPYX

UNE femme enceinte de cinq mois se présente chez un dentiste dans une paroisse de la région de Québec, pour l'extraction de quelques dents à la mandibule.

Le confrère utilise une aiguille d'acier pour l'injection tronculaire. A sa grande surprise, en la retirant, il constate qu'une partie est restée enfouie dans les tissus. Il pratique une incision transversale au trajet de l'aiguille, dans la région du pilier antérieur du voile du palais et s'efforce, sans succès, de retirer le reste d'acier.

Le lendemain, la patiente est conduite chez un confrère de Québec.

L'examen radiologique démontre que la pointe de l'aiguille s'est arrêtée sur la face interne de la tête du condyle, avec une course légèrement inclinée de bas en haut. La pointe de l'aiguille paraît même toucher l'articulation temporo-maxillaire. Il est peu probable que le confrère ait enfoncé lui-même son aiguille à cette profondeur. C'est plutôt dû à la migration naturelle des corps étrangers, si l'aiguille est allée se loger à un endroit si difficile d'accès.

Extirper ce débris d'acier par voie endobuccale devient impossible. La seule méthode pratique nous paraîtrait par la voie externe en agrandissant l'échancrure sigmoïde.

Comme cette opération est difficile et grave, après consultations entre dentistes et chirurgiens, nous conseillons à la patiente de laisser l'aiguille en place et de faire surveiller sa migration au moyen d'examen radiologiques périodiques.

Plus de six mois se sont écoulés depuis

cet accident et la patiente se porte bien, sauf qu'elle a éprouvé temporairement un peu de gêne dans son articulation temporo-maxillaire.

Un autre confrère casse une aiguille d'acier durant une injection tronculaire à la mandibule. (Pour éviter toute douleur à ses patients, ce dentiste se servait, pour ses anesthésies régionales, de la petite aiguille Posner.)

Il réfère immédiatement sa patiente à un chirurgien dentiste plus expérimenté. Ce dernier, selon la méthode connue, repère l'aiguille cassée au moyen de radiographies prises, après l'introduction d'une nouvelle aiguille vers l'épine de Spyx.

La relation sur la radiographie entre l'aiguille témoin et celle qui est cassée, indique à l'opérateur l'endroit où doit se pratiquer l'incision pour atteindre, à angle droit, l'aiguille recherchée.

L'aiguille fut localisée enfouie dans l'épaisseur du périoste.

Un troisième confrère fracture une aiguille d'acier en des circonstances semblables.

Il confie son patient à un chirurgien de renom qui pratique deux opérations sans réussir à retirer ce corps étranger.

Toutefois le patient se porte très bien et ne subit aucun inconvénient de la présence d'acier dans les tissus qui tapissent la face interne de la branche montante de sa mandibule.

Cette aiguille a été cassée en avril dernier.

Ces trois accidents, il faut le re-

marquer, se sont produits avec des aiguilles d'acier et tous au cours de l'année 1934. Ce sont les trois seuls rapportés dans la région de Québec.

La prudence exigerait, ce nous semble, que l'on ne se servît que d'aiguilles de platine irridié, du moins pour les anesthésies régionales.

TROUBLES OCULAIRES D'ORIGINE DENTAIRE

EN février 1934, une révérende Soeur âgée de 31 ans, se présente à mon bureau, l'oeil droit très enflammé et recouvert d'un bandeau pour éviter la douleur que lui cause la lumière. (Photophobie.)

La malade se plaint de douleurs péri-orbitaires très intenses, avec diminution considérable de la vision de l'oeil droit.

En palpant son globe oculaire, je le constate en hypotension et j'élimine le glaucome. A l'examen à la loupe, des exsudats apparaissent localisés sur les bords pupillaires, formant des synéchies postérieures au cristallin.

D'autres synéchies antérieures, en plus grand nombre, faisaient adhérer le sphincter irien à la face postérieure de la cornée. Je pose, avec raison je crois, le diagnostic d'iris plastique:

L'examen radiologique des sinus frontaux et maxillaires donne un résultat négatif.

Ne trouvant aucune cause apparente du côté de son nez, de sa gorge, de ses amygdales et de ses dents, je lui conseille un examen de son état général pour éliminer les causes de tuberculose, de rhumatisme, de métrite, d'appendicite, etc.

Comme cette soeur faisait la cuisine, je lui ordonne le repos complet, en attendant le résultat de son examen général. Son médecin n'ayant rien retracé

de particulier, je fais faire l'examen de son sang. Toujours du négatif.

Après environ trois mois de traitements à l'atropine, son iris droit est presque régulièrement dilaté quand son oeil gauche présente les mêmes symptômes que l'oeil droit au début. Une iritis à répétition apparaît à l'oeil droit avec une petite ulcération de la cornée à 4 heures au cadran cornéen.

En face de cette irido-kératite comme complication inattendue, j'exprime le désir d'avoir une radiographie de ses dents et la dirige vers un dentiste. La patiente n'éprouve aucune douleur du côté de ses dents. Cependant, la radiographie révèle des foyers d'infection apexiens sur trois dents. Le dentiste pratique l'avulsion immédiate de ces dents nécrobiosées.

Moins de huit jours après ces extractions dentaires, la malade constate une amélioration très appréciable de sa vue, puis la guérison s'opère rapidement.

Encore ces jours derniers, elle me faisait remarquer que son acuité visuelle sans être parfaite (à cause d'un astigmatisme congénital) avait repris sa valeur première.

Une fois de plus, il me fait plaisir de proclamer la très utile collaboration du chirurgien-dentiste avec le médecin spécialiste.

—DR. J. A. T.

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MY HOPE

By H. M. REID, D.D.S.

May I but have throughout the coming year,
Courage to face the issues without fear.
May I but give to every task, my best;
And have, as evening falls, a mind at rest.

May I have some reward for what I do,
And of the things that recreate—a few.
Grant that I may supply my loved ones' need,
And fulfil every promise—by the deed.

May I but be sincere; just act as "Me"—
Not play the snob, pretend what I can't be;
But do the right thing always, everywhere,
So my neighbors say of me, "He's square".

May I rate worth by what each neighbor IS;
Not by the wealth that is, or is not his.
Sometimes as men, the rich don't truly ring,
While often tattered rags may robe a king.

But, above all, may I just play the game,
And treat success or failure both the same.
Not vain for winning—or at failure whine—
But with courageous poise, hold life's front line.

MELVILLE, SASKATCHEWAN.



LESLIE T. ALLEN, D.D.S.

Lethbridge, Alberta.

President, Western Canada Dental Society.

Past-President, Dominion Dental Council of Canada.

Past-President, Alberta Dental Association.

Dr. Allen will preside at the Convention of the Western Canada Dental Society
at Calgary, June 3, 4 and 5, 1935.

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"CYSTS AND NEOPLASMS OF THE JAWS". A CONSIDERATION OF THEIR AETIOLOGY, PATHOLOGY, CLINICAL COURSE, DIAGNOSIS AND TREATMENT*.

By CARL W. WALDRON, M.D., D.D.S., F.A.C.S., Minneapolis, Minn.

CYSTS of the jaws are of considerable interest to the dentist, in that they are not uncommon and are found in all ages and ranks of society. Most of these cysts arise from epithelial cells concerned with tooth development, and consequently come under the larger group of Epithelial Odontomes. (British Dental Classification). The cysts most frequently found in either the mandible or the maxilla are the Dental Root Cysts (Radicular Cysts), which have their origin about the root-end areas of infected teeth. The remnant epithelial cells of Hertwig's Root sheath, the paradental epithelial debris of Malassez, are activated by an unknown cause to continued proliferation and cyst formation. Irritation and infection are presumed to be the initiating factors; though it is quite probable that some inherent reactive

tendency in certain of the dormant epithelial cells in the cyst cases must be given as the explanation, in order to account for the comparative infrequency of cysts in cases of root-end infection. Root cysts may continue to grow long after the offending tooth is extracted.

Residual granulomata are given credit for the development of large cysts in the edentulous process. These cysts may therefore appear at any age after the eruption and completed development of the permanent teeth. Their association with the root-ends of deciduous teeth is apparently quite rare, but they have been found and reported.

A group of cysts of more rare occurrence and somewhat obscure aetiology may, for convenience, be called Indeterminate Type Cysts. These cysts may develop in any portion of the mandible

*From the Division of Oral Surgery and Oral Pathology of the School of Dentistry of the University of Minnesota. Read at the Seventy-Fifth Annual Session of the American Dental Association in conjunction with the Chicago Centennial Dental Congress, August 8, 1933.

or maxilla, and their exact mode of origin is not so clearly understood as that of dental root cysts or dentigerous cysts. They may arise in areas where supernumerary teeth are apt to develop, such as in the incisor or premolar regions or in the region of the tuberosity or at the angle of the mandible. No unerupted teeth, however, are found in association with these cysts; and it is presumed that possibly some supernumerary tooth element may have begun to form, but aberrated to produce a cyst. Indeterminate type cysts are usually solitary, but may be multiple, as is frequently the case in the region of the ascending ramus of the mandible. It is probable that some of these cysts develop in edentulous areas from retained granulomatous tissue long after the infected tooth has been removed. The absence of a history of a removed tooth thus places some of these cysts in the indeterminate group. It has been stated by New and Figi¹ that there was an absence of an epithelial lining in cysts of this type removed at the Mayo Clinic. This may be due to the fact that the entire wall was not searched for epithelium; for in several of our cases well developed epithelium was demonstrated. I feel that these cyst walls should be most carefully examined to rule out adamantinoma. From the standpoint of origin, the indeterminate type cysts would seem to be more closely allied to the Dentigerous (Follicular) Cysts than to the dental root cysts, in that no related root-end infection can be discovered.

Dentigerous Cysts are associated with unerupted, often misplaced or malformed teeth. Usually the crown of such a tooth is found projecting into the cyst

cavity, whereas its root may be found embedded in the alveolar process. The development of this form of cyst is apparently related to some projectional, developmental or eruptive difficulty during the period of permanent dentition. These cysts are more likely to develop during this period and may be discovered before the age of ten; but most of them, however, are seen in the second decade. The occasional case seen after forty years of age makes one question the time of onset as necessarily occurring during the period of dentition; for it seems hardly probable that the cysts had been present for thirty or forty years.

Attempts to solve the question of the aetiology of Dentigerous Cysts have met with disappointment. The relative infrequency of such cysts, in comparison with the rather frequent occurrence of unerupted or impacted teeth, leads one to believe that an inherent proliferative tendency of certain of the epithelial cells of the enamel organ about some of these teeth is the deciding factor. Pulp death, with infection of the overlying deciduous teeth in close relation to the oncoming permanent teeth, has been advanced as a cause and confirmed by experimental work². This association was present in two of our cases, but the millions of infected deciduous teeth occurring without the development of dentigerous cysts should make one pause in giving any emphasis to such a theory of aetiology.

The pathology of Dental Root Cysts, Indeterminate Cysts, and Dentigerous Cysts may be discussed before taking up the consideration of the Adamantinomata.

Gross and Microscopic Pathology. Cyst walls vary greatly in thickness, consistency, and structure. They may be

almost transparent and no thicker than writing paper, or they may be quite thick and fibrous. The epithelial lining may be well developed, simulating normal mucous membrane, or extremely thin, consisting of but two or three layers of cells. In some cases the cyst may seem devoid of an epithelial lining, but repeated sectioning will usually demonstrate its presence in some portion of the wall. The epithelium may show various degrees of proliferative activity and subsequent degenerative changes, such as hydropic, lipid, and rarely hyalin degeneration, with breaking down and necrosis of the cells.³⁻⁴

The connective tissue walls of dental root cysts show extreme variations in structure, from a markedly inflammatory granulomatous condition, to a dense fibromatous or a cellular tissue resembling fibrosarcoma. The connective tissue fibers may be extremely delicate. Some cyst walls are almost devoid of blood vessels, whereas others are so vascular that an angiomatous condition is suspected. Loops of blood vessels may extend beneath papillary epithelial masses that project into the lumen of the cyst. Hemorrhage into the walls is frequent. The connective tissue wall is subject to marked degeneration, usually of the mucinous and lipid forms. The latter results in the tissue becoming broken up into spaces or slits filled with cholesterol, which is precipitated out from the blood. The degenerated connective tissue and areas of inflammatory infiltration break down and liquefy to become part of the cyst contents.

Cyst Contents. The cyst contents vary greatly from a gross standpoint. Though frequently thin, clear, and amber-colour-



CARL W. WALDRON

ed, hemorrhage and the various forms of degenerative processes in the epithelial and connective tissue wall may greatly modify its appearance and consistency. In colour it may vary from dark red to almost white, frequently presenting a dark metallic sheen because of the presence of cholesterol. It may resemble starch, or appear granular. Its consistency may be that of a watery fluid, or it may be clear, but thick and tenacious. In other cases it may be opaque and thick, resembling starch, or at times may be sebaceous in character. Certain cysts are found filled with a granular pultaceous mass with but little fluid present. The contents are therefore made up of degenerative products of the epithelium and connective tissue, along with transudation of serous fluid from the dilated capillaries, hemorrhages, and emigration of leukocytes.

The walls of Indeterminate Type Cysts and Dentigerous Cysts have practically the same structural characteristics as those of Dental Root Cysts. Inflamma-

tory infiltrations of the walls, however, tend to be less frequently found, except where there has been previous infection or operative interference. The cyst contents show the same variations in appearance and consistency, and the effects of the enlarging cyst upon the surrounding bone and other tissues are quite identical.

In some cases of Adamantinomata, an apparent regressive, terminal, cystic stage is reached, characterized by the presence of a very large, thin-walled cyst with extensive destruction of the bone. In these, the cyst wall may be like that of a dental root cyst.

One of the varieties of the compound composite odontomes presents a large number of immature teeth or denticles, with larger masses of tooth structure in a cyst cavity. In these the cyst walls proper are similar to those already described.

Adamantinomata (Multilocular Cysts). A very wide variety of tumours of the jaw which are usually soft and cystic in character are included under the group of adamantinomata. Strictly speaking, the term denotes a hard tumour, but by common acceptance it has been made to include all forms of tumour which originate as overgrowths of epithelium of the type normally present in the enamel organ. Adamantine tumours vary in size from small, insignificant, cellular overgrowths to enormous cystic enlargements of the jaw and surrounding parts. They occur most often in the mandible, and but rarely in the maxilla. They may appear at any age. As a rule, their growth is exceedingly slow and may extend over a period of twenty to thirty years. In rare instances they proliferate rapidly and attain con-

siderable size within one year. They occur more frequently in women than in men.

Two clinical types of adamantinomata may be distinguished according to their origin; namely, superficial growths which spring from the epithelial borders, and those which are situated deep in the alveolar process. Of these, the specific cases which have been described in dental and medical literature differ so widely that little similarity in plan of organization is apparent^{3 4 5 6 7 8}. The one characteristic most common to all is the presence of epithelium with marked intercellular bridges similar to the stellate reticulum of the enamel organ. There are also masses of epithelium which simulate the stratum intermedium, typical ameloblasts, and all states of transition between. The substance of the tumour is usually traversed by massive fibrous tissue trabeculi, which form the bulk of the tumour. This stroma may be very cellular. Masses of epithelium and broad anastomosing strands of epithelial cells are prominent characteristics of the Adamantinomata. These epithelial masses undergo central degeneration and liquefy, leaving central cavities in which there is an accumulation of fluid. Areas of stellate cells with distinct intercellular bridges are found; while about the periphery of the cavities there is often a distinct layer of tall columnar cells, resembling ameloblasts. In the early stages, the tumour is clinically solid. The cysts are then microscopic and may on section so resemble glandular structure that they have been misnamed adenoma adamantinum.

As the fluid contents of smaller cysts increase in amount, the intervening con-

nective tissue stroma thins out, as does also the epithelial wall. Finally the degeneration of the septa leads to a breaking down of the walls, the tissue cells being added to the cyst contents. Larger and larger cysts may thus develop until one large cyst may simulate a dental root cyst.

Similar tumours begin in the substance of the maxillae, and have been seen to follow the extraction of a tooth. From both deep and superficial origins, an adamantine (epulis) may arise, composed of fibrous or mucoid tissue containing giant cells. In this stroma, cords and groups of epithelial cells of the enamel organ type may predominate.

Aetiology. The origin of these adamantine tumours has long been a matter of speculation. Many of the early observers believed that they arose from hypertrophic overgrowths of enamel organs. Broca, in his classification, treated them as disturbances of embryonic tooth development. Malassez, in 1885, in his description of epithelial neoplasms, claimed that the sole source of supernumerary teeth, odontomata and adamantinomata, consisted of epithelial rests, which under certain conditions were activated to proliferation and gave rise to the formation of dental tissues. The observations of Malassez were so well founded that they stand today as the basis of our knowledge concerning the source of these several anomalies. He demonstrated that peridental epithelial debris may remain as scattered epithelial rests even late in life. These he found immediately beneath the mucous membrane in the embryonic jaw subsequent to tooth development, and in the adult as remnants of the enamel organ and

the epithelial cord distributed about the teeth and in the peridental membrane. These he considers to be not accidental misplacements of tissue, but rather analogous of a very rich dental supply, such as is found in many of the lower forms of animals. These cells, as well as accessory buds from the enamel organ and epithelial cord of reformed teeth, when stimulated to activity, may constitute the anlage for supernumerary teeth and dental and adamantine tumours.

Adamantinomata usually affect the surrounding bone somewhat differently than do the dental root cysts. The growth of the tumour is uneven and lobulated, and the bony cavity is similarly irregular. These characteristics are apparent in the roentgenogram. In more extensive tumour enlargements, the typical, scalloped, multilocular appearance of bone destruction may be recognized. The fibrous capsular wall of an adamantinoma is quite adherent to the bone, and it would seem that small filaments of tumour tissue extend from the capsule into the bone. Recurrences are not infrequent and thorough cauterization of the bony cavity walls is necessary. Excision of sections of the mandible is not necessary in the smaller adamantinomata.

With this introduction into the subject of cystic Odontomes, we may well turn to the discussion of a number of case records specially selected to bring out important points bearing upon the treatment of the individual case.

Five methods of treatment of benign cysts of the jaws have been advocated, all of which have their merits and may be useful in selected cases. Complete removal of the cyst wall and contents, followed by closure of the wound by

sutures, is indicated in small cysts. When cysts are extensive, the second method of complete excision followed by gauze packing and repeated dressings may be the method of choice. The third method, the Pertsch, consists in a wide exposure of the cyst cavity by a window resection of the labial or buccal wall. The cyst contents are removed, but the cyst wall is left in situ to protect the root surfaces of adjoining vital teeth, the nerves and vessels, and to obviate exposure or perforation of the floor of the nose or maxillary sinuses in cases of extensive cysts of the maxilla. Following operation, gauze packing may be used for several months; or an obturator may be made to be shortened every two or three weeks until the cavity has filled in sufficiently to permit of self-cleansing. The fourth, and least frequently used method, attempts to reduce the size of an extensive cyst cavity by the interposition of subcutaneous tissues or muscles by means of buttons and tension sutures. This has been described by Harrison.⁹

To these methods may be added a fifth, which is limited to large cysts situated in the posterior part of the upper jaw which extend into and occupy the major portion of the space normally occupied by the maxillary sinus. Cysts of this type that do not extend forward to destroy the maxilla under the floor of the nose are, I feel, best treated by a modification of the Caldwell-Luc operation. The entire cyst wall is enucleated, the antrum is opened widely, and a large window is made into the inferior meatus of the nose. The entire oral incision is then closed and post-operative dressings or other treatments are practically eliminated.¹⁰ Calcium and phos-

phorus metabolism should be improved by diet and codliver oil, etc.

Recent researches seem to show that the local calcium supply is a much more important factor in bone formation than the specific activities of particular cells—the osteoblasts or bone-forming cells. Experimentally good bone formation has resulted following the filling of a space by bone chips, even when the chips were boiled; and similar good bone formation has been secured by the use of a powdered organic calcium (di-hexise phosphate), or with inorganic calcium (Triple phosphate and carbonate). These experimental results would seem to hold out a hope that in certain selected cases some such procedure may afford a more rapid regeneration of bone after the removal of a cyst.

Case I. DENTAL ROOT CYST OF MANDIBLE. This lady, thirty-five years of age, complained of a discharging sinus in the lower left first molar region. The tooth had been extracted about two months previously and the alveolus had failed to heal. The socket had been opened up, probed and curetted several times. The patient had noted some discomfort deep in the jaw for several months. X-rays showed a marked cystic destruction of the mandible extending from the left molar region to the right angle.^{Fig 4-5} The root-ends of all the teeth above the cyst were seen to be resorbed to the extent of 2 to 4 millimeters. On June 7, 1928, under novocaine, the buccal plate of the alveolar process was removed in the left bicuspid region to expose the cyst wall. The removal of the outer plate was carried forward across the symphysis, each tooth being extracted in turn. The dissection was

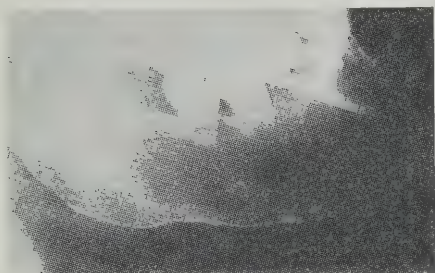


FIG. 4, CASE I.

Lateral jaw film of right side, showing extensive bone destruction and involvement of root ends of teeth.

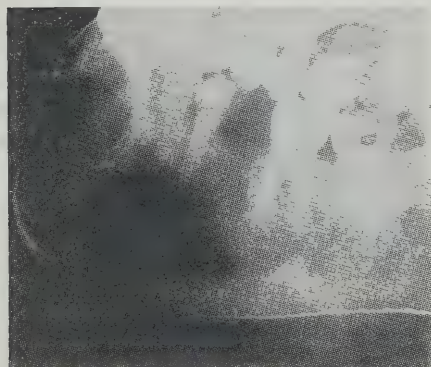


FIG. 5, CASE I.

Lateral jaw film, left side, showing distal extent of bone destruction.

continued distally on the right side to the angle, removing the teeth but preserving the lingual process as well as possible. The cyst had not expanded the mandible; hence the operative exposure was limited, making the dissection of the cyst wall from its bony bed most difficult. The cyst cavity was packed with iodoform gauze; and subsequent dressings of balsam of Peru gauze were changed at three-day intervals.

Bony regeneration of the mandible was quite satisfactory, and a lower denture was worn with the average degree of satisfaction. In reviewing this case,

the following questions immediately arise: Would this patient have been better served by a Partsch operation, and could the teeth have been preserved to usefulness? The pulps of some of these teeth on section show vitality with considerable degenerative changes, such as fatty metamorphosis, fibrosis, and calcific degeneration. The teeth in which large fillings had been placed showed complete calcification of the pulp which prevented their sectioning. The marked pulp changes in the teeth without caries or fillings were much greater than would be expected in pulps of individuals of this age (35). It would seem, therefore, that the serious changes in the pulp would be a factor in the consideration of the employment of the Partsch operation and the retention or removal of the teeth.

Blum¹¹ recommends that root canal fillings be inserted before operation in roots extending into the cyst areas such as in this case. At the time of the Partsch operation, the root-ends are amputated. Our pulp studies do not confirm the necessity of root canal operations and root amputations where the Partsch operation is employed. I should welcome discussion of this problem.

Case II. This man, aged thirty-five years, came with a suppuration of two weeks' duration of the right third molar region of the lower jaw. There was a history of caries and root-end infection of the molar teeth extending over a period of several years. These teeth were removed at intervals with some curetting of the sockets, which healed somewhat slowly. X-ray examination had never been made. Clinical examination showed some swelling of the mandible in the



FIG. 6, CASE II.

Lateral jaw film showing cyst in the molar region and separate indeterminate type cyst in the ascending ramus.

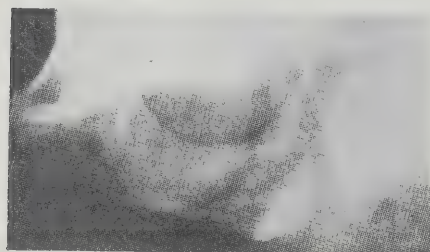


FIG. 7, CASE II.

Lateral jaw film showing complete regeneration of bone following removal of cysts.

molar region and ramus and a small sinus leading into a cavity in the bone. Lateral jaw X-ray films revealed a cystic destruction of the bony substance in the molar region and a second cystic area involving the ascending ramus above the angle.^{Fig 6*7}

In August, 1924, under ether anaesthesia, an incision was made in the right molar region and the buccal plate of bone was resected sufficiently to give access to the cyst wall, which was dissected free from the bony wall of the cavity. The wall was quite thick and showed inflammation, due no doubt to the previous operative interferences. The inferior dental nerve and vessels were exposed for about 1 cm. Careful exploration on the distal bony wall failed to show any communication between this cyst and the

one in the ascending ramus. Incision was then carried upward on the anterior surface of the coronoid process. The bony anterior wall was removed sufficiently to uncover the cyst, whose wall was found to be very thin and apparently free from inflammation. The wall was dissected free, and it was determined that the cyst had virtually excavated the entire ramus and had produced some slight lateral expansion. Iodoform gauze packings were inserted in both cavities. Dressings were changed at three-day intervals for four and one-half months, at which time healing was complete. X-rays ten months later showed complete regeneration of bone.^{Fig 7} In 1929 examination showed a good alveolar process ridge and a strong jaw.

This case demonstrates the excellent regeneration of the bony substance of the mandible that may be anticipated after complete incision of the cyst wall. No untoward symptoms due to operative exposure of the mandibular nerve have been noted. Narrow but extensive cysts of the ascending ramus that have excavated the ramus without expanding it are most difficult to remove. Great care must be taken to separate the entire cyst wall from its bony cavity. I can see no justification for attempting a Partsch operation for cases of this type. The small, narrow entrance to the cyst cavity, when compared with its depth and height, would seem to me to make certain that with the closure of the incision the cyst would recur and lead to the destruction of additional bone.

Case III. 0-27-9. INDETERMINATE TYPE CYST OF THE MANDIBLE.

This young lady, twenty years of age, a dentist's assistant, had noticed discom-

fort in the left third molar region for several months. This had been considered due to the impending eruption of a third molar. Discomfort and swelling becoming quite acute. A small dental film was taken, which showed extensive loss of bone, distal to the second molar. The patient consulted an exodontist, who immediately saw the necessity of taking an extra-oral ramus film in order to determine the extent of this condition. This X-ray showed what appeared to be a second extensive cystic area in the ramus.^{Fig 8}

The retromolar area was opened up and irrigated with ensuing relief of the acute symptoms. Two weeks later under novocaine anaesthesia the buccal plate was resected, the second molar extracted, and the cyst wall uncovered. This was found to extend well up towards the condyle and tip of the coronoid process, and it was soon determined that there was but one cyst present. The X-ray appearance of two cysts was due to the thickened lingual portion of the mandible in the region of the angle. The cyst wall was removed with difficulty; but on inspection, it seemed to be completely removed, and examination of the cavity revealed no sign of remnants of the cyst wall. Post-operative dressings of balsam of Peru gauze were continued for about two months. X-ray examination five months after operation showed

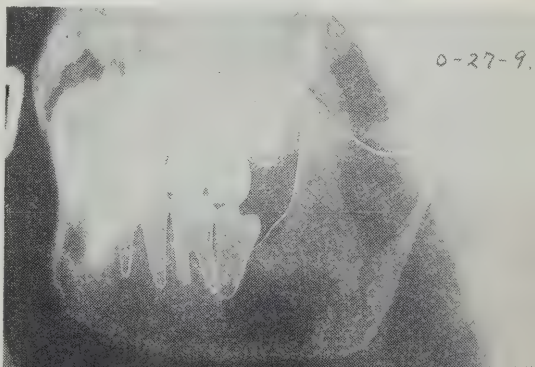
apparent normal progress of bony regeneration. About one year later, the patient had some discomfort; and the X-ray showed a change in the picture. Bony regeneration had continued most satisfactorily in the molar region, the angle, and the posterior part of the ramus. There was, however, a large circumscribed cyst in the ramus. The region was explored and a very thin-walled cyst removed. Five months later some further difficulty developed; and the region was again explored, and some granulations removed. Healing was thereafter uncomplicated; and X-rays two years later show excellent regeneration of bone.

Case IV. DENTAL ROOT CYST OF THE MANDIBLE (RESIDUAL TYPE).

This lady, sixty years of age, had noticed for but a few months, an enlargement of the right side of her lower jaw. She had worn upper and lower dentures for at least twenty years. During the preceding eighteen months the patient had lost considerable weight; and the loss of fat in her facial tissues had made the enlargement of her mandible quite noticeable. Examination of a lower denture constructed some eight years previously revealed an asymmetry that suggested that the cystic enlargement of the mandible was of many years' duration. No accurate history was obtained regarding the condition of the teeth, presence of root-end infection, etc., before extrac-

FIG. 8, CASE III.

Indeterminate type cyst of the mandible in the region of the angle and the ramus, appearing as two cysts.



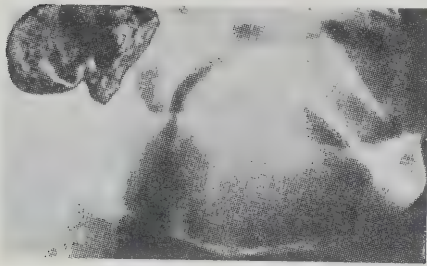


FIG. 9, CASE IV.
Lateral jaw film showing outline and size of cyst
(1926). Inset—gross specimen of cyst wall.

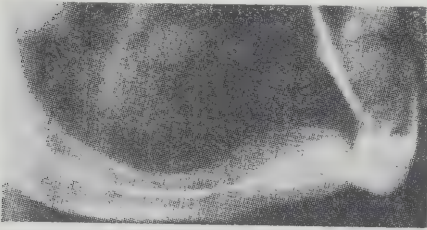


FIG. 10, CASE IV.
Lateral jaw film showing regenerated mandible
(1931)

tion. The mandible and the alveolar ridge on the right side were much enlarged. In the molar region a soft spot could be felt with the finger, denoting that the enlargement of the cyst had resulted in complete resorption of the overlying ridge in this region. The X-ray^{Fig 9} showed almost complete destruction of the body of the mandible from the incisor region to the angle. On June 14, 1926, under novocaine anaesthesia a large section of the external upper wall

of the cyst, with the overlying thinned-out bone and mucous membrane, was removed. A very large cyst cavity was exposed and found filled with a thin amber granular exudate with a metallic sheen typical of cholesterol degeneration. The cyst wall was dissected free from the thinned-out bony walls of the mandible. It was adherent to the fibrous sheath of the inferior dental nerve and vessels throughout its course and at the mental foramen. The cavity was packed with iodoform gauze. Later, dressings of balsam of Peru gauze were continued every third day for three months. In six months an excellent alveolar ridge had become regenerated and a new denture was inserted. In March, 1931, clinical and X-ray examination^{Fig 10} showed excellent bone regeneration and a well-proportioned ridge.

This case is of interest from several standpoints. The regeneration of bone is most complete; the alveolar process is larger, better proportioned, and stronger than on the non-operated side. The mandibular nerve was exposed for more than 2 centimeters of its length and could readily be lifted out of its bed. Aside from a partial anaesthesia and parasthesia lasting but a few weeks, no fifth nerve symptoms were noted, and as fine an outcome could be obtained by the Partsch operation. In Partsch opera-

FIG. 12, CASE V.
Dental root cyst of the mandible showing the forward extension with destruction of root ends that took place over a period of five years.

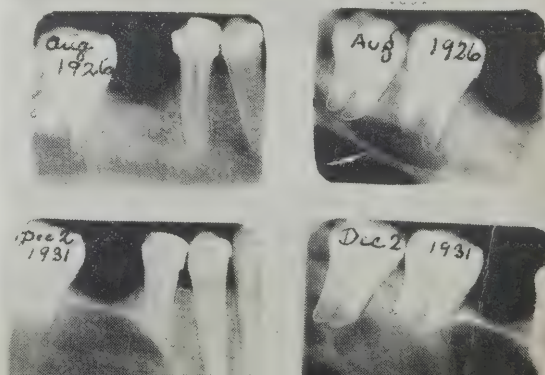
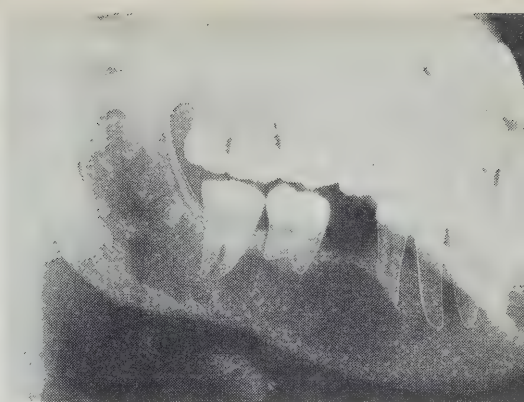


FIG. 13, CASE V.

Dental root cyst involving the body, angle and ramus of the mandible, with destruction of root ends.



tions for cysts of the mandible in which the cyst wall has encroached upon the nerve trunk, Blum¹¹ recommends removal of that portion of the cyst wall overlying the mandibular nerve in order to permit a blood clot to form around the nerve.

Case V. 0-31-D-194. Forty years of age. This man had practically no symptoms aside from slight neuralgic pains behind the angle of his jaw and in the region of his ear and temple. Ten years before, a lower first molar had been extracted and the patient understood that a granuloma had been removed with the root. Small dental X-rays taken in 1926 showed a small cystic area beneath the second and third molars. For some reason this area was not explored; and five (5) years later (1931), the small dental film^{Fig 12} showed the cystic area to extend forward to the bicuspid region. The root-end of the second bicuspid was destroyed obliquely by the enlargement of the cyst. One does not frequently have an opportunity such as this to check up on the rate of growth of cysts. It must be noted that there is a small dark area below and distal to the root of the second molar in the 1926 film. As a lateral jaw film was not taken at this time, one cannot say whether a cyst was present in the ascending ramus in 1926; or if present, what its extent of growth has been since that date. Posteriorly the limits of the cyst were not well defined in the 1931 dental film, and a lateral

jaw film showed the cyst to extend high up into the ascending ramus.^{Fig 12-13}

In December, 1931, under novocaine anaesthesia, the cystic area was explored through a buccal incision. This was extended distally, and the buccal plate removed to permit exposure of the cyst membrane. The root-ends of the bicuspid and the two molars were exposed by the dissection, and these teeth were removed. The dissection was carried upward along the anterior portion of the ascending ramus, which was opened widely, almost to the tip of the coronoid. The cyst wall from both the molar region and the ascending ramus was removed and found to be rather thin and to contain a yellow fatty exudate. The wall was found to be adherent to the inferior dental nerve sheath in three areas where the nerve was exposed: in the molar region, in the lower part of the ramus, and at its entrance to the mandible. The nerve was distinctly seen to be covered by bone in the region of the angle and in about the middle portion of the ramus. In the dissection it was somewhat difficult to be sure whether one was dealing with one or two cysts. The cyst wall removed from the ascending ramus was somewhat thinner than that removed from the molar region.

It is of interest to discuss the condition of the pulps of these removed teeth in an effort to determine the injury sustained from the pressure of cysts and

thus to aid the discussion of the advisability of the Partsch operation in similar cases. The pulp of the bicuspid shows many calcific bodies representing constructive changes. The larger masses show changes of an osteoid nature and surrounding areas which are made up of calcium salts. The coronal portion (2/3) of the pulp contains, besides these masses, varying scarred areas distributed throughout the pulp without special reference to the position of calcific bodies. The capillaries in the pulp nearest the occlusal surface of the tooth are numerous and engorged. The odontoblastic layer appears to have reverted in type almost to the young connective tissues from which it came. This tooth carried a large restoration, and it was evident that considerable secondary dentine had formed. Such changes, however, might be expected from large fillings alone; and the possibilities of successful retention of this tooth in a vital state with a Partsch operation is a matter I should like to have discussed.

In this case we have no means of comparing the pulps of intact teeth free from caries with those of large restoration as we did in Case I.

Case VI. 0-30-D-157. INDETERMINATE TYPE CYST OF THE

MANDIBLE. This lady, twenty-five years of age, had noticed a soreness of the right side of her lower jaw for about a year. A few months later an enlargement was noted. Five years before, a retained deciduous premolar had been removed. There was no history of the eruption or extraction of the second bicuspid tooth. No trace of this tooth was shown in the X-ray^{Fig 14}, which revealed a large cyst extending from the cuspid to the third molar region and from the root-end areas to the lower border. Beneath the first molar an irregular calcified mass was seen. The first and second molars and other teeth on that side seemed to be vital by the cold water test. The molars were unquestionably involved by the cyst wall.

In October, 1930, under novocaine, the outer wall of the cyst was uncovered from the second molar region anteriorly to the bicuspid. The first molar was removed, and the cyst wall dissected from its bony cavity. Three perforations of the lingual plate were noted with intervening intact bone. A calcified bone-like tissue was found within the cyst wall and was removed in two pieces. There was some question about the retention of the second molar. It was finally left in, because it was felt that its removal might weaken the jaw at this time and it seem-

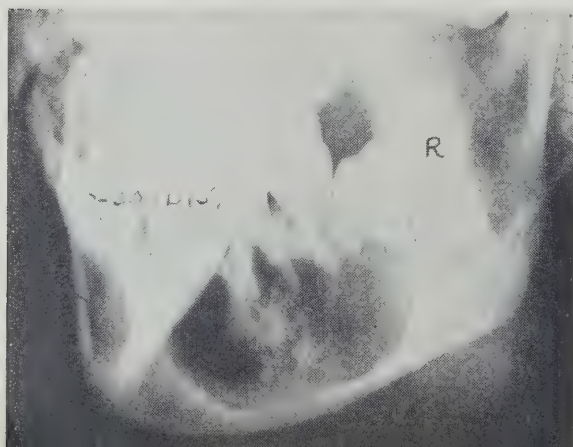


FIG. 14, CASE VI
Extensive dental root cyst of the body of the mandible showing a central area of calcification.

ed possible that its vitality might be maintained.

Dressings were continued for a couple of months. The cyst cavity filled in; and X-ray examination nineteen months later shows excellent regeneration of bone. The question of using the Partsch procedure in order to retain the first molar tooth might be raised in this case.

Case VII. 0-30-R-10. DENTIGEROUS CYST. This case is of particular interest in that the presence of a cyst in relation to an unerupted impacted mandibular second molar had been known for at least six years. Dental X-rays taken at intervals had shown a gradual enlargement of the cystic area, and an increase in size of a small calcified mass present in the cyst. There were no symptoms. In January, 1930, under novocaine anaesthesia, the cyst was uncovered through an alveolar buccal incision. The first molar tooth was removed, and the cyst wall was separated from the bony cavity and removed. The unerupted molar was elevated from its position and was manipulated through the opening in the process. Gauze dressings were continued for several weeks. Bony regeneration was complete in a few months.

Case VIII. DENTIGEROUS CYST. OPERATIVE PATHOLOGIC FRACTURE OF MANDIBLE. NON-UNION. This man, fifty years of age, was operated upon under general anaesthesia for the removal of a cyst situated beneath an impacted third molar. The operation was carried out through an intra-oral incision. During efforts to remove the cyst the mandible was fractured. A dentist was then called in and he removed the impacted tooth, the second molar, which was uncovered on its distal root

surface, and the pulpless first molar. The jaw was bandaged, which kept the teeth in occlusion for a few days, after which he was permitted to open and close his mouth. The operative area was treated by irrigations, and heat was applied externally for the marked swelling and reaction that ensued. During the following month, four or five pieces of bone came away through the mouth incision.

Examination seven weeks after operation showed the teeth to occlude normally. The patient was able to project the mandible forward and to the right and left. There was considerable mobility at the site of fracture and the lateral jaw X-ray shows almost one centimeter of separation of the fragments. The posterior fragment is displaced forward and upward. A certain amount of fibrous union has since developed, and there is less mobility at the site of fracture. The patient must decide whether to accept this amount of disability or go to the trouble and expense of having a bone graft performed in order to secure a strong bony continuity of the jaw.

This case illustrates the hazards of general anaesthesia for the removal of difficult impactions and extensive cysts. Respiratory difficulties consequent to operations in the posterior part of the mouth, the forcible use of a mouth gag, undue force in the use of elevators or other instruments may result in fracture. In large cysts associated with difficult impactions, novocaine with suitable premedication is the anaesthesia of choice. Possible fracture must be anticipated, and measures taken to treat such a complication should it occur.

Case IX. DENTIGEROUS CYST OF THE MANDIBLE. This young girl,

nine years of age, came with an enlargement of the outer surface of the mandible on the left side in the bicuspid region. She gave a history of caries of the deciduous molar with pulp chamber and root canal therapy and subsequent filling. The tooth had remained fairly comfortable, but recent enlargement had been noted. Examination showed a firm prominence of the process beneath the premolar. Dental and extra-oral X-ray films^{Fig 15} revealed cystic destruction down to the level of the cortex of the lower border. Within the cyst cavity at its lower border could be seen the shadow of the crown of the permanent second bicuspid tooth. The cyst wall with the bicuspid crown was removed, through the usual window exposure, in November,

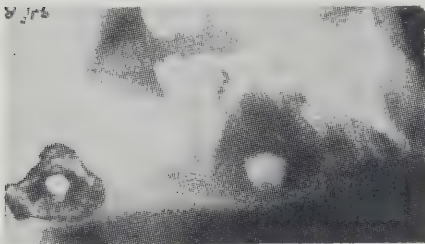


FIG. 15, CASE IX.

Lateral jaw film showing dentigerous cyst beneath the pulpless deciduous molar. The bicuspid crown may be seen at the lower border. Inset. Wall of cyst showing crown of tooth.



FIG. 16, CASE IX.

Lateral jaw film, four years after operation, showing complete regeneration of the mandible at site of cyst.

1926, under nitrous-oxide anaesthesia. Routine balsam of Peru gauze dressings were carried on, and in less than three months, the cyst cavity was obliterated. On return for examination in March, 1931, X-ray showed complete bone regeneration with a well-proportioned alveolar process.^{Fig 16}

Case X. DENTIGEROUS CYST OF THE MANDIBLE. This young girl of seven years came with a hard swelling of her lower jaw in the right bicuspid region. This had been noticed for several weeks. About two years before, the second deciduous premolar tooth had been found deeply carious; and the pulp chamber had been opened up, treated, and filled. In the interval occasional discomfort was noted. The prominence of the external surface of the jaw was gradually increasing. Dental and extra-oral X-ray films showed an extensive circular cystic destruction of the mandible, in which the unerupted crown of the bicuspid tooth could be seen in an abnormal position. In October, 1929, under nitrous-oxide anaesthesia the thinned-out buccal plate over the cyst wall was removed and the wall was dissected from its bony cavity. The misplaced, unerupted tooth to which the cyst wall was attached was also removed. The cavity was dressed with balsam of Peru gauze about twice each week for approximately two months. By this time the cavity had been practically obliterated. In March, 1931, examination showed an alveolar process of normal contour, and the X-ray showed complete regeneration of the bone.

The exciting cause leading to the development of dentigerous cysts is not known. The most likely cause seems to

be the breaking down and autolysis of a few cells of the enamel organ, due probably to pressure and movement during growth. Once begun, the cyst grows through the further breaking down of cells, which increases the cyst content; and its further increase is continued through the medium of osmotic changes. Infection of the overlying deciduous molar may have been a contributing cause in the development of the dentigerous cysts in Case IX and in Case X.

Block-Jorgensen² found that in every one of the twenty-two cases of follicular (dentigerous) cysts in his series a necrosed, deciduous tooth, or remains of such a tooth, were found in direct connection with the cavity of the cyst. It is his experience that commencing (follicular) cysts are very common, but that they disappear without any other treatment than the removal of the deciduous tooth concerned. He states that the various circumstances all seem to be in favour of the interpretation that the follicular cyst does not take its origin in the follicle, but rather from necrosed deciduous teeth, as a root cyst.

Case XI. Pathol. No. 0-27-1669. DENTIGEROUS CYST OF THE MANDIBLE. This girl, twelve years of age, gave a history of swelling and discomfort in the left molar region of her lower jaw for nearly two years. The first molar tooth had been extracted eighteen months before. Since then there had been a gradual increase in the swelling. Examination showed a marked bulging in the molar region external to the ramus. Lateral jaw X-ray films^{Fig 19} showed a very large cyst involving the molar region, the angle, and the ascending ramus. An unerupted, misplaced

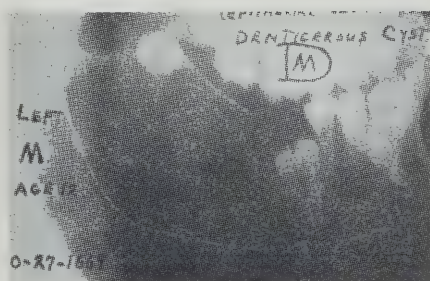


FIG. 19
Film showing extensive cyst in the mandible.

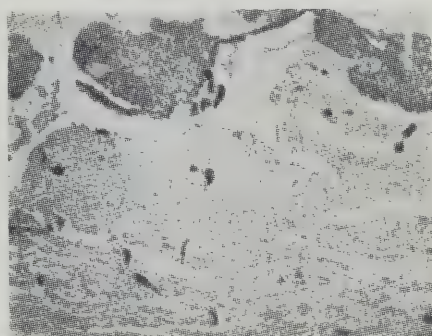


FIG. 21, LOW MAG. X 130.
Irregularities in the continuity of the connective tissue wall of the cyst, as well as that of the epithelial lining, suggests that there have been alternative periods of breaking down and healing, due to such factors as surgical intervention, eruptive processes, or changes in the relations between the activity of the factors governing the growth of the tumour and resistance of the patient.

second molar tooth was seen to be close to the lower border, and a partially formed, third molar tooth could be seen high up in the coronoid region.

Novocaine anaesthesia was used, and through a buccal incision, which was extended high up on the anterior surface of the ramus, the cyst wall was removed.^{Fig 21} Special care was taken to avoid injuring the inferior dental nerve, which could be readily lifted up. The two unerupted teeth were removed and the cavity was packed with vaselined iodoform gauze. There were no post-

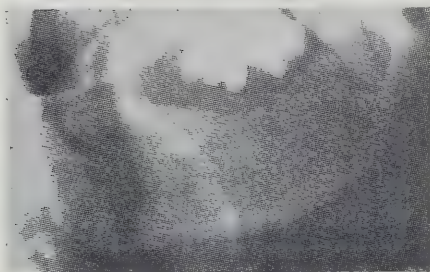


FIG. 22

Film showing complete regeneration of the mandible in the molar region and the ascending ramus, three and one-half years after operation.

operative complications, and the cyst cavity was obliterated in about three and one-half months. Examination in March, 1931, showed a good alveolar process ridge and complete bony regeneration of the molar region, angle and ramus.^{Fig 22} There is no disturbance in the function of the mandibular nerve.

Case XII. DENTIGEROUS CYST. MULTIPLE OF MANDIBLE AND MAXILLA. This little girl at the age of seven had a large dentigerous cyst removed from the anterior portion of the left side of her mandible by Dr. Daniel Ziskin. The X-rays were suggestive of a multilocular tumour^{Fig 23}, an adaman-

tinoma in association with the crowns of the incisor and cuspid. The cyst walls, however, on microscopic examination failed to show any evidence of adamantinoma. The area healed without complications and bony regeneration was excellent.

About eight months later, enlargement of both sides of the upper jaw in the bicuspid regions was noticed, and dental X-ray films showed cystic areas in relation to the developing cuspid teeth. The right side was explored by Dr. Ziskin, and a portion of the cyst wall was removed. Sometime later the left upper cuspid region was opened up, and the cyst wall and the cuspid crown were removed. Microscopic examination of the cyst walls again proved them to be of the simple type.

About eighteen months later, enlargement of the right side of the upper jaw was again noticed and the dental film showed a recurrence of the cyst.^{Fig 24} At operation (April 28, 1931), I removed the cyst wall; and on finding the tooth crown in a fairly normal position, I decided to leave it again in the hope that

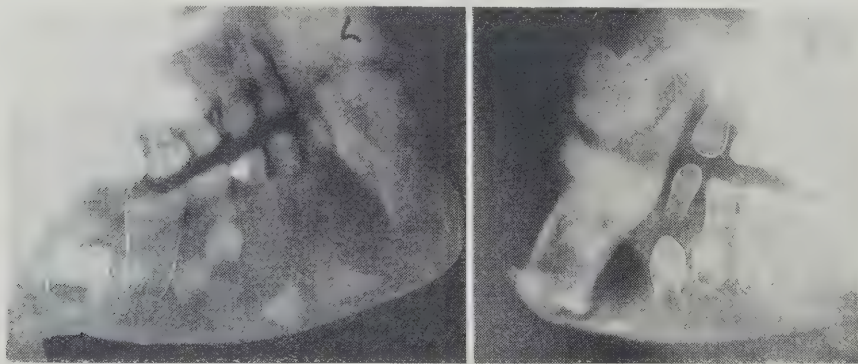


FIG. 23

Lateral jaw film showing a large dentigerous cyst of the mandible from the symphysis to the mental region. The crowns of unerupted, misplaced permanent teeth are seen at the lower border.

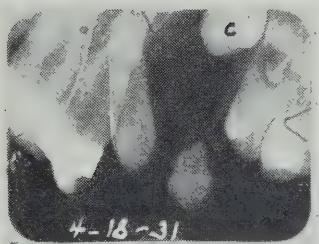


FIG. 24
Dental X-ray film showing dentigerous cyst of the maxilla in the cuspid region.

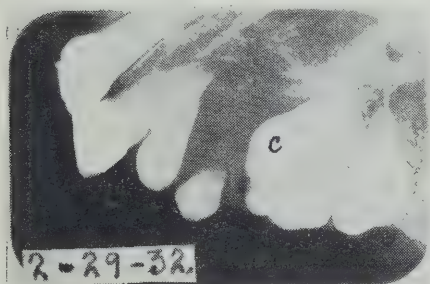


FIG. 25
Bite plane film showing the same region following the removal of the cyst wall without interference with the crown of the cuspid. Note the development of the root and the progression of the tooth downwards through the process.

it would continue to grow and eventually erupt. Repeated X-rays seem to show that this is taking place.^{Fig 25}

Six months later, the patient noticed some discharge behind the upper right first molar; and examination showed a small sinus. The dental X-ray showed a cystic area in the tuberosity region; a second film placed high up showed the presence of the crown of the second molar. This area was opened up October 10, 1931, and found to be quite large. Its relation to the maxillary sinus was in doubt, and a sinus X-ray was taken. This showed the sinus to be situated above the crown of the molar. Decision was made to do a Partsch operation leav-

ing the cyst wall and tooth, in the hope that this molar would continue to develop and erupt. This area has been watched and the opening is being maintained by cleansing and probing.

A similar cyst with infection developed in the left maxillary second molar region and was similarly treated without removing the tooth crown.

In February, 1932, an enlargement was noticed in the region of the first cyst operation on the left side of the mandible. Dental X-ray films again were suggestive of Adamantinoma, in that the upper border of the jaw seemed scalloped.^{Fig 26} In March, 1932, this area was explored, and two small cysts were removed. The bony surface of the jaw was curetted back and thoroughly cauterized with phenol. Examination of the cyst wall again showed no evidence of Adamantinoma. Tissue was also sent to Dr. Broders of the Mayo Clinic, who reported "a squamous cell, epithelial-lined cyst with an inflammatory fibrous and bony wall containing foreign-body cells".

This patient, now twelve years of age, has been kept under observation; and a questionable area was noted in dental X-ray films in February, 1933. A lateral jaw film showed that a dentigerous cyst

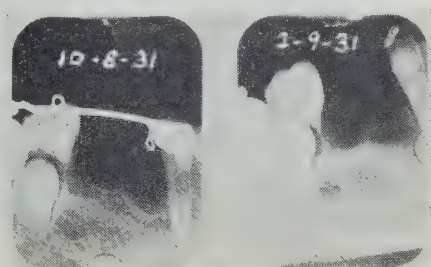


FIG. 26
Recurrent cyst site of previous operation in the mandible. Note scalloped border of the alveolar process ridge suggestive of adamantinoma.

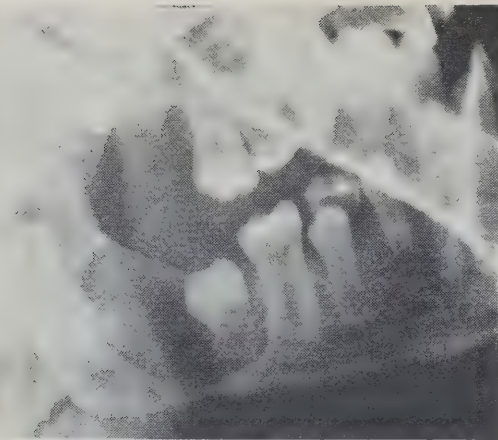


FIG. 27

Dentigerous cyst of the mandible in the region of the angle in relation to developing second molar. Cyst removed, leaving tooth, which has since erupted normally.

had developed under our very eyes to involve the lower portion of the ascending ramus.^{Fig 27} On February 27, 1933, under general anaesthesia the cyst was opened up and the cyst wall removed, leaving the crown of the second molar.

At this time, August 1, 1933, the mandible is regenerated nicely and the second molar is erupting. The two upper second molar cysts were reopened to provide better drainage. Dental X-rays show continued development and a lower position of the upper second molars, and it seems hopeful that they will finally erupt and be of service. From her past experience it seems likely that this little patient will have more dentigerous cysts develop in association with her third molars. This is a most unusual case.

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TO BE CONCLUDED IN THE APRIL
ISSUE OF THE JOURNAL.

DENTAL CONVENTIONS

ONTARIO DENTAL ASSOCIATION, May 20-22, in Toronto.

WESTERN CANADA DENTAL SOCIETY, June 3-5, in Calgary.

AMERICAN DENTAL SOCIETY OF EUROPE, July 31-August 3, at
Dorchester Hotel in London.

All visiting Canadian Dentists are cordially welcome.

K. C. CAMPBELL, *Secretary*,
83 Portland Place, London W.1.

AMERICAN DENTAL ASSOCIATION, November 4-8, in New Orleans, La.

THE PRACTICE OF DENTISTRY IN THE DROUGHT AREA OF THE WEST

By SYLVESTER MOYER, D.D.S., Rockglen, Sask.

THE Depression, the Drought, and the Hoppers have brought both tragedy and comedy to the dried-out area which spreads over the southern section of the Prairie Provinces.

As a result of the crop failure for six successive years, a peculiar condition has arisen, causing the absolute lack of money even for the bare necessities of life. Every farmer is on relief. Automobiles have been converted into "Bennett-Buggies", and former well-to-do farmers living in grand houses, are bemoaning their painful poverty. As a consequence, dental needs were totally neglected until pain conquered pride, and proud mothers were compelled to bring their crying children to me for

help, since I am the only dentist within a radius of forty miles. These mothers, with tears in their eyes, would say: "We have no money. Can't you help us"

What did I do? I did just what you would have done, dear reader. I dried more tears and sent more swollen faces home, wrinkled with smiles, during the past three years than I have done during the forty preceding years of my dental practice, fifteen years of which were spent in Galt, Ontario.

One hundred and thirty-four indigent patients called at my office last year. When it became known that they could get an aching tooth removed even without money, whole families came. Some came in wagons, others in Bennett Bug-



In the good old days before Nature began taking her revenge. The old rotation of wheat, wheat, summerfallow, may turn such land as this to desert.

(Photo Courtesy Country Guide.)



The result of one season's drifting. There was little of this until the fibre was worked out of the soil.

(Photo Courtesy Country Guide.)

gies, some on horseback, and others on foot, even in the dead of winter.

Abcessed teeth, swollen faces, pyorrhea, edentulous mouths, unbearable pain, were all among the problems that had to be dealt with.

In this service, however, I was not dispensing charity, for these patients did not wish to be pauperized. They were proud and honest and are still bravely looking for the "rift in the clouds".

They ask for my "bill", which is never questioned and is always strictly ethical. They say, "What can we bring you?" and it is here that I profit from the conditions of adversity. For extractions they usually bring vegetables or poultry. For more extensive service, as fillings, dentures, etc., I require about twenty-five per cent cash and the balance in "What have you?" Barter still continues, as my records show—a scoop-shovel for extracting a tooth a thoroughbred Angus bull for a full upper and lower denture for a lady in a big house; two hundred live hens and many dead ones; fifty turkeys,

twenty ducks and geese, one hundred pounds of butter, eggs, fresh pork and sausage, sauerkraut, a cellar full of vegetables, cook-stove, heater-stove, fifteen bags of potatoes, twelve tons of lignite coal, five hundred fence posts, thirty-five dollars worth of blacksmithing, forty dollars worth of groceries, mower, wagon, Essex coupé with rumble seat, a garage, five sets of team harness, three horse-collars, four bridles, saddle, thirty head of cattle, thirteen horses, six live pigs and one dead one, blacksmithing outfit, eight tons of hay—but let this suffice.

In all this co-operative bartering business, I have felt the thrill that one experiences from serving and pleasing—more comedy than tragedy.

Quite recently a rather reticent young man presented himself and said "Toothache". I extracted. He put on his hat and said "Hen or Gobbler?" I said "Gobbler."

For a country blacksmith's widow I extracted her teeth and inserted a full upper and lower denture; and in pay-

ment received a cow, a calf, and part of a blacksmith's outfit. She was made so attractive that she was able to marry again within a year and a day of the passing of her first husband — bride, groom, and dentist all happy, and no money exchanged hands.

Our milkman and his wife had both been toothless. I provided them with teeth for which they gave me two cows and calves. These in turn I gave to my hired man to square with him. The same day he traded them to Bud Chelson for a seed-drill and a two-furrow plow.

In this way five persons got rid of what they did not need and in exchange got what they wanted. Not a dollar was required and all were happy.

But while I have found these new paths of business thoroughly interesting, I am conscious of the fact, that I have to a certain extent, lost touch with my dental friends and dental associations which I trust may be renewed when once we reach "Prosperity Corner". In the meantime, we will keep our chins up, even though there be Russian thistle in the stubble.

NOMADS OF THE NORTH

By W. J. BOORMAN

THE Chukchis race occupies an area of approximately 300,000 square miles in the Arctic region of Northeastern Siberia. Their chief export is prepared walrus and seal skin. These skins are treated by women, who bite them sometimes for the greater part of the day.

This continual gnawing of the hides results in the operator losing her teeth in two years. It is odd to reflect that a lovely fur we encounter in one of the world's great cities may have worn the teeth of a Chukchi woman down to the gums.

—*Chambers Journal.*

A SERIOUS PROBLEM

Excerpt from the New York Journal of Dentistry

“OUR boasted Twentieth Century civilization needs to pause in its self-applause until it finds a way to bring the benefits of the dental art and science we now possess to the relief of the 79 per cent of our 125,000,000 people who regularly receive no dental care in any given year. That is an economic problem first and a professional problem second. We ought to have ingenuity enough to accomplish this noble end without destroying the relationship which exists between individual dentist

and individual patient and without asking dentists to bear burdens which society in general should assume. The problem in all its economic and professional aspects is in many ways the most far-reaching and serious issue before the American people today. The challenge of it gives zest and promise to the dentistry of the coming years.”

—By Dr. Harlan H. Horner, Assistant Commissioner of Higher Education of the State of New York, at the New York Dental Centennial.

REPORT OF THE BENEVOLENCE COMMITTEE OF THE CANADIAN DENTAL ASSOCIATION

Presented to the House of Delegates at Toronto, May, 1934.

THE American Dental Association commenced its Dental Relief Fund in 1912, no payments being made until 1925, when the fund had reached \$150,000. Only the interest on this fund can be used, and the fund stands today at approximately \$320,000. About 25% of the membership of the American Dental Association contribute, the majority \$1.00, quite a number \$2.00, and a few \$5.00 and \$10.00. State societies, local societies, manufacturers, pharmaceutical houses, and some dental laboratories contribute.

The Ontario Dental Association has such a fund, which is maintained by the sale of Christmas Seals, and interest on their bonds. The seals are sent to all the 1,800 dentists in Ontario. In 1931, 564 subscribed \$657.00; in 1932, 396 subscribed \$471.00, showing the average of about 25% of the members contributing about \$1.10 each. The cost of seals plus postage, etc., works out to about 10c per sheet of 100 seals.

To ascertain if the object of the fund could be attained through some form of insurance, two reputable insurance companies—a life company and a sickness and accident company—were approached. Both companies replied that they would not care to try any form of blanket insurance to cover such a diversified body of men, as such a method had proved a failure in the past whenever tried.

Since writing the above, a further suggestion along the insurance line has been noted in the February issue of *Dominion Dental Journal*, Page 59, and this will be investigated.

The Post Office can supply a die by which return envelopes may be stamped, and the Association would pay 4c postage *only* for those envelopes which are returned. The American Dental Association enclose an ordinary return envelope, not stamped. The Tuberculosis Association in this city enclose a stamped return envelope.

There are about 3,880 dentists in Canada, of whom about 2,200 are more or less active in dental organizations, that is, are members of provincial associations.

* * * *

CONCLUSIONS

Your Committee have agreed on the following, and we submit the same for your approval:

The policy of raising a Benevolence Fund by the sale of Christmas Seals to dentists, laboratories, supply houses, pharmaceutical houses, is a sound policy and is approved. Contributions should also be made by the Canadian Dental Association, the Provincial Associations, and the various local Associations. As about one-half of the dentists of Canada are located in the province of Ontario, such a fund would be assured of greater

success if the Ontario Dental Society could be induced to withhold further sale of seals in that province after the Canadian Dental Association Fund is inaugurated, and this is made a recommendation. The sale of seals must not be rushed or commenced before the proper ground work is done to inform the dentists scattered throughout the Dominion of the purpose and object of this Fund. The Fund should function not so much for us as for those who come after us, and a poor start would invite failure, which would give the Fund a severe setback. Thus time should be taken to make the proper approach to dentists, explain the project, its purpose, and its backing by the Canadian Dental Association.

Only a small percentage of the dentists in Canada are really familiar with the Canadian Dental Association, and explaining this project as proposed by letter or circular would be expensive and unsatisfactory; but it is hoped that the C.D.A. will soon commence publication of the C.D.A. dental magazine, and it is understood that this magazine will go to every dentist in the Dominion. It will furnish a wonderful backing and approach for the Benevolence Committee to explain without cost its project, aims and purpose to every dentist in Canada, which now could be done only by a circular letter or letters to every dentist, which might not be read, or not understood, or might even be discarded.

If the publication of this magazine is commenced by this summer, we should launch the Christmas Seals programme by Christmas, 1934, otherwise we should wait until the magazine has been published for at least several months, in

order to furnish the publicity and background without excessive overhead.

It is obvious that no dependable scheme of relief can ever be established without a reserve fund to back it. We feel that a certain time should elapse before any payments are made, to enable a reserve fund to be built up, and although it might work a hardship on the very needy ones at the present time, we are of the opinion that premature payments would swamp our Fund and in the long run would retard the success of the proposal. Men will not contribute to a fund that is being used up as fast as the payments come in. The American Dental Association (see above) did not make any payments until reserve reached \$150,000, but we in Canada with fewer dentists would not need to wait for such an amount to be accumulated.

In case there may be some difference of opinion as to how and when these funds should be used, we advise that no part should be used for relief purposes before five years have elapsed or until a sum (the amount to be determined by the Canadian Dental Association) is reached, and then only the interest on this amount to be used and the principal allowed to accumulate.

At a later date a line of procedure would be established whereby investigation of relief requests would be made, first by the nearest local dental society, and if approved, the information turned over to the Provincial Association for investigation, and on their approval forwarded to the proper relief committee of the Canadian Dental Association. We are further of the opinion that when money is expended, say, in five years from now, the contribution from the

C.D.A. Benevolence Fund should be 75% of the amount, the Provincial Association should contribute 20% and the local association 5%. In having these three bodies provide the money, and also make the payments to the needy ones, the responsibility would be placed on all parties. Should the C.D.A. make all the payment for Benevolence, it might mean that the local authorities would strive to get as much money as they possibly could, and they might deplete the Fund.

All those who have been members of the C.D.A. for five years would be eligible for relief after investigation as above.

In the meantime your Executive will continue their work on a design of Christmas Seal and submit the same to you for your approval. The C.D.A. magazine might also furnish the medium for a competition for a suitable design of seal.

Samples of American Dental Association seals and Ontario Dental Association seals are attached.

All of which is respectfully submitted on behalf of the Executive and Committee by

(Signed) L. T. ALLEN,
Lethbridge, Alberta,
Chairman.

A MESSAGE FROM QUEBEC

DURING a rather strenuous and successful Dominion Election Campaign, some time ago, one of our very astute political leaders laid particular stress on the fact that elections were not won by prayers alone and so I am reminded that the final launching of the Journal of the Canadian Dental Association was not realized except through the untiring efforts of those who have laboured day in and day out, for years back, to convince their confrères in this Dominion of the absolute necessity of an official Canadian Dental publication. Now that they have accomplished their object, what, may I ask, do we intend to do about it?

My own reaction to the Journal is one of very sincere pride and satisfaction

along with a desire to lend my every assistance to those who have, so far, carried the weight of this undertaking. Their task is now only well begun and it is only through the combined efforts of every ethical dentist in this country of ours that we can hope to make the influence of the Journal what it deserves to be in Canadian Dentistry. The officers and staff need your support in every way and I urge my French and English speaking confrères in this Province of Quebec to give it to them generously, and without hesitation.

G. GUELPH ARMITAGE,
President.

College of Dental Surgeons
of the Province of Quebec.

RESOLUTION OF THE CANADIAN DENTAL ASSOCIATION

Quebec, P. Q.,

March 20th, 1933.

Honourable R. B. Bennett,
Prime Minister,
Parliament Building,
Ottawa,
Can.

Honourable Sir:

The Board of Delegates of the Canadian Dental Association, wishing to suggest constructive measures in order to bring back our country to normal conditions, beg the privilege of submitting to your consideration and that of your Government the following resolution:

WHEREAS the present economic crisis has afforded a special occasion for examination and criticism of the existing economic structure upon which some of our Canadian institutions have been built;

WHEREAS numerous complaints arising from many points of Canada against the laws regulating the promotion of companies, the modifications of the capitalization of existing organizations, the trustees supervising the interests of bondholders, etc., give rise to the belief that there is room for needed corrections in our present financial structure;

WHEREAS the Canadian Dental Association, being desirous of helping and supporting our statesmen in their attempts to apply the remedy to one of the important causes of this economic crisis; and further, being desirous of removing, or nullifying, the arguments of

those who wish the destruction of the capitalistic régime, arguments which at the present time strengthen dangerously some appeals to the population of Canada for a radical change, therefore be it

RESOLVED that because we do not wish to see a régime, sound in its source and principles, tend to eventually vanish away in almost general disapprobation, the Canadian Dental Association does herewith suggest to the Government of Canada the desirability of creating a NATIONAL COMMISSION composed of economists, jurists, and professional men, not connected with politics or any important financial group, for the purpose of investigating our present economic structure, with the end in view of recommending to Parliament the necessary changes for the removal of whatever is vitiated.

Signed

THE CANADIAN DENTAL ASSOCIATION.

This idea of suggesting to the Federal Government the formation of a National Board, to which would be entrusted the duty of indicating the necessary means to bring an end to the evident abuses now prevailing in finance, has also received the entire approval of the professional associations hereafter mentioned:

The Ontario Dental Association;

The College of Dental Surgeons of the Province of Quebec;

The College of Dental Surgeons of British Columbia;

The Alberta Dental Association;
 The Council of Dental Surgeons of
 New Brunswick;
 The College of Dental Surgeons of
 Saskatchewan;
 The Dental Association of Prince
 Edward Island.

This move of our Association is inspired by no other motive but that of endeavouring to help our leaders in their strenuous efforts to right the actual dis-

treasing economic conditions of our country, and we sincerely hope our suggestion will meet with your views and those of your distinguished colleagues.

Pray accept, Honourable Sir, the respectful regards of,

Yours sincerely,

PHILIPPE HAMEL.

President of the Canadian Dental
 Association.

THE GREAT LAKES ASSOCIATION OF ORTHODONTISTS



G. VERNON FISK,
 Of Toronto, President of the Great Lakes
 Association of Orthodontists.

AS the name implies, the Great Lakes Association of Orthodontists is composed of specialists in ortho-

dontia who practice in cities of the United States and Canada adjacent to the Great Lakes.

An annual meeting has been held each year since the organization of the Association. With a membership of fifteen, the first meeting was held at Detroit in 1926. Dr. Milton T. Watson was chairman of the organization committee and the first president of the Association. The membership has grown until to-day there are seventy-five members. The Association became truly international in 1932 with the election to membership of two Canadians. When the Association met in Toronto two years ago, six other Toronto orthodontists and two from Hamilton were elected to membership, bringing the total Canadian membership up to eleven.

Canadians are also well represented upon the executive of the Association. Dr. Stuart Crouch, Secretary, and Dr. Harvey Bean, member of the Board of Censors, will ably assist Dr. Fisk in making arrangements for the 1936 meeting which will be held early next Spring in Toronto.

"But still believe that story wrong which ought not to be true."

—Sheridan.

Editorial

Editor—M. H. GARVIN, Winnipeg.

Associate Editors

PRINCE EDWARD ISLAND	W. T. Waye, Charlottetown
NOVA SCOTIA	A. W. Faulkner, 69 Gottingen St., Halifax
NEW BRUNSWICK	J. F. Edgecombe, 117 Union St., Saint John
QUEBEC	Campbell Morris, Birks Bldg., Montreal
ONTARIO	T. R. Marshall, 2198 Queen St. East, Toronto
MANITOBA	J. F. Morrison, 403 Medical Arts Bldg., Winnipeg
SASKATCHEWAN	F. C. Harwood, Moose Jaw
ALBERTA	John Clay, 901 Southam Bldg., Calgary
BRITISH COLUMBIA	J. S. Bricker, 1513 Medical-Dental Bldg., Vancouver, B.C.

THE SPIRIT OF THE PRAIRIES

To our readers, who feel that they are facing many hardships in these strenuous days, we advise you to read the article in this issue entitled "The Practice of Dentistry in the Drought Area of the West," by the late Dr. Sylvester Moyer of Rockglen, Saskatchewan. It will make you tighten your belt and go to work.

Whether this editorial might not better be written on the subject "The Uncertainty of Life" is problematic, since Dr. Moyer died suddenly just three days following the writing of this paper for the Journal, a great shock to his many friends.

Dr. Moyer had been in practice forty years, but had recently found himself in the centre of a famine area where people had no money to pay for dental service, even though they wished to do so. Adversity has the effect sometimes of bringing to the fore talents which otherwise would have remained dormant, and so it was with Dr. Moyer. He was not daunted by such problems, but went to work with an optimism that puts the average younger man to shame, looking forward to the time, when once again he might be able to attend dental conventions, and fraternize with his brethren in the profession. In imagination I can hear him quote the words of Horatius Bonar:

"What though ten thousand faint
Desert, or yield, or in weak terror flee!
Heed not the panic of the multitude;
Thine be the captain's watchword,—Victory!"

Dr. Moyer might have moved to more promising harvest fields. He might have refused to give service because of the inability of his patients to pay, and lived on his savings. He might have spent his time hammering at the government to provide adequately for these unfortunates. In any case, one might have expected him at least to complain of the gathering clouds. But no,—he had the spirit of the Great North-West, which does not know defeat. He had the spirit that William Prescott had in mind when he penned these splendid lines:

"How can you keep a determined man from success? Place stumbling-blocks in his way, and he uses them for stepping-stones. Imprison him, and he produces the 'Pilgrim's Progress.' Deprive him of eyesight, and he writes the 'Conquest of Mexico.'"

It is to these men in the lonely spots of our great Canadian Nation, as well as to the leaders in our metropolitan centres, that the Journal of the Canadian Dental Association wishes to bring a message of hope and inspiration. We can do so in very many ways if every dentist in Canada will loyally support our Canadian Dental Association. We urge all to place our national organization first in our thought and in our effort. Let us choose our leaders from among those who think nationally and who will carry out our wishes in this regard. The voice of the Canadian Dental Association will then be heard from coast to coast throughout Canada, and every dental practitioner will benefit therefrom.

DENTAL PROVIDENT SOCIETY OF THE BRITISH DENTAL ASSOCIATION

This society was formed on strictly mutual lines, to provide members of the British Dental Association with Sickness Benefits during disablement due to sickness or accident, and, by investment of the Annual Surplus, to accumulate funds for the payment of a sum of money at death, at the age of sixty-five, on premature retirement from practice, or on proceeding abroad to practice.

A start was made in 1908 with sixty-seven members, and was a success from the very commencement. The membership has steadily increased since that time until, in 1933, there were 1,326 members who held 16,836 shares in the Society.

The ratio of management expenses to subscription-income has been brought down to 4.9%.

RESULTS

(from 1908 to 1933 inclusive)

Paid to members in sickness benefits.....	£ 55,014
Paid to members withdrawing.....	35,986
Paid to representatives of deceased members.....	6,524
Amount standing to the credit of members on 31/12/33	231,704
Total benefits.....	£329,228
Total of members' contribution from 1908 to 1933.....	277,278
Excess of benefits over contributions.....	£ 51,950

The Assets of the Society are the exclusive property of its members, and their market value at the end of 1933 was £275,000.

The leaders of the British Dental Association are to be congratulated upon achieving such a splendid success in this field of endeavour.

The Canadian Dental Association has appointed Dr. Kenneth M. Johnson, of Winnipeg, chairman of its committee on Group and Liability Insurance, and Dr. L. T. Allen, of Lethbridge, continues as chairman of the Benevolence Committee. We trust that reports will be presented at the next meeting of the House of Delegates, upon which action may be taken which will benefit every dentist in Canada who wishes to co-operate.

CALGARY CONVENTION

Only occasionally does the spirit trouble the waters of daily complacency in the dental life of Western Canada, and then all rush forward to see who can obtain the greatest benefit from stepping into the pool.

Even under normal conditions, a dental convention is held but once in two years in the three great prairie provinces of Alberta, Saskatchewan, and Manitoba. Owing to economic strain, there has not been a convention held since the memorable one in Winnipeg four years ago. But now the waters of the famous pool of Bethesda are about to be moved and men are planning a trip to Calgary for the Western Canada Dental Society Convention, June 3, 4, and 5.

An inspiring program of practical papers and clinics is being arranged. Two distinguished men, the eminent roentgenologist, Dr. Clarence O. Simpson, of St. Louis, and Dr. John T. Ryan, of Mount Vernon, Washington, have agreed already to take part. Many other outstanding events are promised, and when one considers the proximity of the Convention City to Banff and Lake Louise, it would seem as if no sacrifice would be too great in order to participate in this unusual event.

GREETINGS FROM ONTARIO AND SASKATCHEWAN

We gratefully acknowledge receipt of the resolution passed recently at a meeting of the Board of Governors of the Ontario Dental Association and that passed by the Moose Jaw Dental Society, and the Ottawa Dental Society, congratulating the officers of the Journal of the Canadian Dental Association upon the advent of the first number of the Journal and extending their best wishes and assurance of co-operation.

NEWS FROM THE PROVINCES

ALBERTA

June 3rd, 4th and 5th are the dates set for the Western Canada Dental Association in Calgary.

While the prospectus is not complete, the committee has lined up an imposing list of clinicians by outstanding men. Dr. Clarence O. Simpson, of St. Louis, a clinician of international reputation, will speak on X-ray and diagnosis. The distinguished leader from Mount Vernon, Washington, Dr. John T. Ryan, will speak on gold inlays and gold foil.

Calgary is the ideal spot for the Western Canada meeting, there being just enough city and just enough mountain to make for a perfect convention of clinics and recreation.

Special hotel rates have been secured at the Palliser, the C.P.R. Hotel and other city hotels. The hotels at Banff and Lake Louise will be open also, and side trips are being arranged.

Golf and special trips will crowd the holiday to capacity.

The ladies are especially invited, and unusual entertainment is being provided.

The exhibits of the recent advancements in equipment and supplies are bound to be interesting and instructive.

The dates have been chosen with the view that men can motor to the meeting. Parking space has been arranged and transportation will be provided locally. In fact, the committee is arranging a meeting and a program that will be outstanding in the history of Canadian assemblies, so plan to make this your con-

vention and the prelude to your holiday for 1935.

Dr. Harold Canniff has been elected president of the Provost Board of Trade.

SASKATCHEWAN

Last year the Council of the Saskatchewan College of Dental Surgeons secured some assistance from the provincial government for the dentists in the drought areas, in order to assist them in caring for those on relief. The Council again met the government recently and urged a larger allowance for the dentists in these areas and, further, that all dentists receive an allowance for those unable to pay, where the service was necessary to relieve pain or for general health reasons. Last year, from the amount appropriated by the government for medical and dental services and hospitalization for those on relief, the dentists received about one-fifteenth. The government has not yet expressed itself as to its intentions this year.

The Council is at present considering the question of group insurance for the members of the profession in the province, but any action will depend upon the attitude of the members themselves.

Two men were prosecuted and fined for illegal practice in the province during the past year, and the names of two registered dentists struck from the roll for non-payment of the annual fee.

The members of the Council this year are: J. C. King, Humboldt, president; W. W. Irwin, Moose Jaw, vice-president; P. W. Winthrope, Saskatoon; A. J. Brett, Regina, and D. J. Brass, Yorkton; with L. J. D. Fasken, Regina, as permanent secretary-treasurer and registrar.

The Moose Jaw Dental Society has been enjoying a very successful fall and winter season. Supper meetings have been held monthly, starting in October. At the opening meeting Dr. Harold Johnston gave a splendid talk on "Why Dental Caries With Modern Civilization?" using the work of Dr. Weston A. Price as the basis of his talk. At the November meeting Dr. Gordon Beasley gave an instructive paper on "Children's Dentistry." In December Dr. A. E. Chegwin gave a fine paper on a subject much to the fore these days, "State Dentistry, Yes! or No!" which occasioned considerable discussion and which will be the subject of a further paper and discussion at the January meeting.

Each program is made more interesting and entertaining by having two members relate actual stories of a humorous nature originating in their practices. These are called, "Reflections From a Mouth Mirror." Two other members gave some short, practical hints that impressed them in reading the dental literature. This feature is much appreciated and is called, "Extractions."

At an additional meeting Dr. R. H. McDougall gave a chair clinic on "Periodontoclasia" which was very instructive. The present officers of the society are: R. H. McDougall, president; F. B. Cooper, vice-president; L. F. Hare, secretary-treasurer.

Dr. A. E. Chegwin was recently re-elected to the City Council of Moose Jaw by a large majority. Congratulations!

MANITOBA

A two-year practical test of health insurance in the municipality of Woodworth, population 2,000, is proposed by the government of Manitoba. The plan provides:

1. Complete medical service, including surgery, hospitalization, and cost of pre-scriptions.

2. Payment of doctors' fees and hospital charges through taxation on property and a poll tax.

3. Right of the individual, within reasonable limits, to choose his own physician or surgeon and select the hospital to which he desires to go for treatment.

4. Maintenance of competition between doctors, continuance of the high standard of medical care and protection against racketeering by doctors.

The scheme would be administered by a medical advisory board of three doctors, named by the municipality, the department of health and the medical association.

The result of the experiment will be the guide to the government in extending the service, eventually slated to cover the whole province.

Dr. E. L. White and Dr. J. F. Morrison, of Winnipeg, and Dr. C. L. Strachan, of Virden, were re-elected to the Board of Directors of the Manitoba Dental Association at the annual election held in Winnipeg in January. The officers of the Association for 1935 are: Dr. E. L. White, president; Dr. N. S. Bailey, of Portage la Prairie, vice-president; Dr. J. F. Morrison, registrar-secretary, and Dr. A. E. Proctor, treasurer. Dr. D. A. McCarten is also a member of the board.

ONTARIO

The Academy of Dentistry, Toronto, in co-operation with the Departments of Health and Welfare of this city, conducted with splendid results a dental health service for people on relief, from May 25th last, till December 31st. In promoting this service the Academy recognized the need for a dental service for indigents, and offered their services, in a co-operative way, to the city. The Department of Public Health provided a suitably equipped clinic, and supplied a dentist and a dental nurse on full time salary. The City Council, recognizing the need of dental service in their health program, accepted the generous offer of our profession, and agreed to compensate dentists for their expenses in connection with it.

The Ladies' Auxiliary, an organization of Toronto dentists' wives, were kind enough to pay for all clinic supplies during the entire period. This must be recognized as a very splendid gesture on the part of the ladies.

The profession itself supplied a complete dental service to a goodly number of people. Three hundred dentures were constructed, and in this service 109 dentists took part. The city paid expenses, and the dentists gave their time and service. In the clinic itself one operating unit was kept continually in use by volunteers from the profession. 105 of our members gave 194 half days in the aggregate, with these results:

Number of visits for treatment	1,964
Number of patients receiving operative treatment	921
Alloy fillings	628
Silicates and Cement	480
Treatments and Prophylaxis	705
Number of patients receiving denture service	166

It should be pointed out that this service, as operated in Toronto, makes no attempt to serve all the indigents who come. Many make applications for dentures who have been without them ten to fifteen years. Others come, having left their old dentures at home, in hopes of getting new ones for nothing. The feeling of the committee is that dentures should be provided:

1. Where there is an urgency for health reasons.
2. In case of nursing or expectant mothers.
3. To fit a man for a job when there is reasonable assurance that he can get one.

It might be said that is a hardship, that others not included should be denied teeth, but there are many near indigent much more worthy of help, who cannot afford to purchase what they need.

Much credit for the success and achievement of the year's work goes to Dr. Frank Martin, president of the Academy, Dr. W. J. Kerr, chairman of the supervising committee, and Dr. H. W. Reid, who is in charge of the clinic. It would seem, that in a time of need, our profession in Toronto have rendered a very excellent piece of public health service.

Kent County Dental Association had a very successful and well attended meeting on the evening of January 17th. Dr. P. M. Kyprie, of Detroit, was the essayist and clinician. The program attracted dentists from Windsor, Sarnia and London, and these men were well repaid for their visit. The Journal of the Canadian Dental Association will be glad to hear more from this enterprising society.

Dr. L. W. Duxtater, of New York, a well-known author and authority on Prosthetic Dentistry, addressed the Toronto Academy of Dentistry on January 10th, and the Hamilton Academy of Dentistry on January 12th. Dr. Duxtater presented his lecture with a liberal use of lantern slides, and covered a very wide range in his subject. The essayist indicated the very splendid results to be obtained in Full Denture Prosthesis, both as to aesthetics and function of new dentures, by following the modern technique of immediate denture service.

The Minister of Health announced in December the immediate formation of the province's first rural health unit, including the counties of Stormont, Glengarry, Prescott, and Russell.

A \$33,000 grant has been made from the Rockefeller Foundation for use in the next five years. The municipalities plan to contribute two-thirds of the cost.

Approximately 90,000 people live in these counties. At present 2,000 children have received dental attention and 100 per cent. have received immunization from diphtheria.

The Honorable the Minister of Health, Dr. J. A. Faulkner, has invited Dr. R. Gordon McLean, F.A.C.D., Toronto, to join the Province of Ontario Cancer Committee.

Dr. McLean is in charge of dental services at the Toronto General Hospital, and is acting as dental consultant in their Oral Cancer Clinic.

Dr. McLean is the immediate past president of the American Association for the Advancement of Oral Diagnosis, and is a member of the Faculty of Dentistry, University of Toronto.

For several years Dr. McLean has served dentistry as a member of the Board of Directors of the Royal College of Dental Surgeons.

The Journal of the Canadian Dental Association tenders its congratulations to Dr. McLean on his appointment, with the knowledge that the profession of dentistry could have no more capable representative on this provincial committee investigating causes and treatment of cancer.

RESOLUTION FROM OTTAWA.

Whereas, the Canadian Dental Association has commenced publication, under its auspices, a dental Journal known as the Journal of the Canadian Dental Association, *Le Journal de l'Association Dentaire Canadienne*,

and

Whereas, Canadian dentistry has never, until the present time, owned and controlled a professional journal to speak for Canadian dentistry,

and

Whereas, the influence of such a journal, in building up a national sentiment in Canadian dentistry and uniting the different dental organizations in Canada, and improving the organization known as the Canadian Dental Association, is of paramount importance,

and

Whereas, the publication of such a journal will add greatly to the usefulness of the national body,

THEREFORE BE IT RESOLVED that the Ottawa Dental Society goes on record this twenty-first day of January, 1935, as approving and endorsing the project of a national journal sponsored and controlled by the Canadian Dental Association, and congratulates the editors, business manager, and their associates on the splendid initial issue recently published and wishes them success in this history-making achievement.

—Proposed by Dr. S. W. Bradley.

Seconded by Dr. G. W. Joynt.

Passed unanimously.

(Sgd.) A. A. Cameron, Sec'y.

QUEBEC

The 37th Annual Meeting of the Montreal Dental Club, held in the Clubrooms on December 12th, 1934, was an enthusiastic and

well attended one. Following an inspiring message from the retiring president, Dr. J. N. Blacklock, the elections took place with the following results:

Honorary president, J. N. Blacklock; president, E. T. Bourke; vice-president, F. W. Saunders; secretary, C. H. P. Moore; treasurer, K. C. Berwick; executive committee—C. H. Barr, E. C. Burbank, L. E. Kent, I. K. Lowry, R. E. McMahon and A. R. Winn.

The president, Dr. E. T. Bourke, then gave a brief review of the Club's history and a sound message of advice to the members. The Club decided to renew its subscription to the McGill Dental Library, and to support its clinic at the Weredale Boys' Home.

The Montreal Dental Club was very fortunate in securing Dr. Wm. K. Prendergast for the annual interchange meeting with the Academy of Dentistry of Toronto on January 16th. He gave a very interesting and instructive paper on Phonetics. This was supplemented by lantern slides and drawings. This very practical subject has not received the attention it deserves, and Dr. Prendergast stirred up much enthusiasm in the subject which should react to the benefit of the public which we serve.

A joint meeting sponsored by the Montreal Dental Club was held with the Mount Royal Dental Society and La Société Dentaire de Montréal on February 5th. Dr. George Winter's motion picture showing the technique for the removal of the mandibular third molar was shown. This proved most interesting and instructive to all present.

The annual winter meet of the Montreal Dental Club was held this year at Lucerne-in-Quebec, February 15th, 16th and 17th. At this meeting the members had the opportunity to get together socially and indulge in the many winter sports, skiing, sliding, skating and curling. Some very close contests took place, and everyone returned with renewed vigour for the daily task.

McGill dental students are to be congratulated on the successful publication of the first volume of the McGill Dental Review. This publication is well edited, and contains articles

of general interest to dentists, by members of the Faculty and students.

NEW BRUNSWICK

Dr. P. C. Bonnell has been appointed chief dental surgeon and Dr. J. B. Gosnell and Dr. R. S. Langstroth as senior dental surgeons of the General Hospital at Saint John.

Last fall Dr. J. F. Worrell was elected mayor of Saint Andrews. Congratulations.

PRINCE EDWARD ISLAND

The Ontario Farmer states that Prince Edward Island institutes are assisting the health department in the organizing of dental

clinics in various centres throughout the island. The institute secures a suitable place for the clinic; sees that the rooms are clean, and have the necessary articles in hand such as water basins and stove, before clinic opens; provides a capable assistant to make appointments and keep records; secures a comfortable place for the dentist to stay as a guest, and submits a list of children whose parents cannot pay for them. The clinic is not free for those who can pay—but a preliminary examination of the teeth of the school children is financed by a government grant on application of the school district desiring this service, an application based on the assurance that the majority of parents are willing to pay for treatment of their children at the clinic.

GENERAL NEWS

On November 16th Dr. Alexandre Guéniot, of Paris, France, celebrated his 103rd birthday and is still mentally active and engaged in writing his memoirs. He ascribes his longevity to daily walks, a regular mode of life and the fact that he massages his arms and legs twice a day.—*Journal of the A.M.A.*

The national debt of Canada is \$247.00 per capita obligation against every man, woman and child in the country. In the United States it is \$254.00 per capita and in Great Britain \$858.00 per capita.

The following figures for gross dental population in the United States are interesting:

U.S. Census, 1920	56,152 dentists
Polk's Register, 1928	67,334 dentists
U.S. Census, 1930	71,055 dentists

—*Oral Hygiene.*

The Dental Relief Fund Committee of the American Dental Association reports, that

during the year ending June 30, 1934, it received from the sale of Christmas seals, \$12,437.28, contributions from between nine and ten thousand members.

The 2nd International Congress of Stomatology will be held in Bologna (Italy) on April 14-19, 1935. H.M. the King of Italy has granted his gracious patronage to the Congress and H. E. Benito Mussolini has accepted the position of honorary president.

Numerous groups of stomatologists from all countries have signified their intention to participate.

Besides the usual scientific papers and exhibits, there will be a trip to Ravenna to visit Dante's tomb and the monuments of Byzantine Art. Special privileges have been offered to delegates in connection with all the famous museums, art galleries and libraries, also special railway rates and reduced fees to all places of amusement.

"Little minds are tamed and subdued by misfortunes; but great minds rise above them."

—Washington Irving.

"We in America are still living within a civilization where the rights of criticism, free discussion, attack on the government, democratic speech, and hence essentially democratic control, are still unquestioned.

The menace of both Fascism and Communism is not that they seek to control economic production and the distribution of material goods, but that they threaten the soul of man.

Because manufacturers or farmers are put on quotas of production, because workers are assigned shorter hours and standardized wages, no one has dreamed of suggesting that the regulation of their economic activities has anything to do with their prayers, opinions, the way they order their lives, or the education of their children. Herein lies the great and triumphant virtue of the American system and tradition: it is able if preserved to introduce changes in the economic system and at the same time guard the civic liberties without which life is unendurable." — *By Ludwig Lewisohn, in Harper's Magazine.*

Broken Hypodermic Needles. The patient must always be informed when a needle has broken and a piece of it has been left in the tissues. Two useful suggestions may be made:

Firstly, that nothing appreciable is gained by using a very fine needle, for it is chiefly these that break; and secondly, as the needle almost always breaks where it enters the body of the syringe, viz., at the hub, the needle should not be inserted into the tissues right up to the hub. If this procedure is adopted, and the needle breaks, a part of it is left protruding outside the tissues and can quite easily be removed.

If the needle breaks and the patient swallows, the broken fragment may disappear very quickly; consequently one should have available a pair of pliers or artery forceps with which to grip the protruding end of the broken needle as quickly as possible in case of an accident.—*Dental Record, London.*

IN MEMORIAM

GEORGE E. TELFORD,

one of Vancouver's leading citizens and dentists was accidentally drowned in Howe Sound on January 6th. He was sixty years of age, and a graduate of the University of Pennsylvania, 1901. He was a skilful and progressive dentist, taking an active part in all dental societies' activities. He was a devout member of the Baptist Church, twice superintendent of the Sunday School, member of the board of the Baptist Church of British Columbia, and for several years president of the Prohibition Party.

He was a charter member of the Kiwanis Club, chairman of the Big Brothers Movement, and his influence for good was felt among the younger men of the city.

Dr. Telford was a man of the highest principles. He was willing to serve his fellows, and throughout his life did many unobtrusive acts of kindness and charity.

J. H. BOURDON,

who for several years has lived a retired life at his country home, passed away at the age of seventy-seven. Since 1893 he was secretary of the School of Dentistry of the Province of Quebec and a member of the Board of Governors. During fifty years he practised his profession with an enthusiasm above the ordinary. He was one of the pioneers among the French section of Canada. Esteemed by the public and his confrères, he improved the social side of our profession.

He was affable, kindly, and dignified, and left to his profession a memory which will long survive him.

J. R. MCGREGOR,

of Elora, Ontario. Died on December 22nd while visiting friends in Toronto. He had practised dentistry for thirty years, and had a wide circle of friends by whom his passing is deeply regretted.

HOWARD M. REID.

Manitoba and Saskatchewan joined in mourning the death of a dentist well-known and respected in both provinces when Dr. Howard M. Reid passed away at Melville, Saskatchewan, on November 9th last.

Born in Ontario, the late Dr. Reid came to Manitoba with his parents while quite young. He graduated from the R.C.D.S., Toronto, in 1906. He practised in Manitoba, at Rapid City and Hamiota until 1928, when he moved to Melville, Saskatchewan.

He was an enthusiastic sportsman, an ardent horticulturist, and had a keen appreciation of good music, as well as a deep interest in the religious life of his community. He was prominent in fraternal circles and served as District Deputy Grand Master of Masonry for a term. He was devoted to the best in literature and wrote a number of stories and poems, many of which were accepted for publication by prominent periodicals. His poem, "My Hope," written New Year's Day, 1934, gives an insight into the richness of his personality and has been an inspiration to many. This poem appears on page one of this issue of the Journal.

JAMES ARTHUR SLADE,

aged sixty, passed away very suddenly at Thornbury, Ontario, on January 29th. Dr. Slade has practised his profession in Toronto for many years, and is known to a great many of our confrères. Members of the "Zip" fraternity particularly, who perhaps knew him best, will regret exceedingly his untimely passing. Dr. Slade was a great fraternalist, an ardent and enthusiastic member of the Masonic order, being the recipient of many honours.

ALFRED OWRE,

of New York, died January 2nd, after an illness of several months. For many years Dr. Owre was Dean of the Dental Department of the University of Minnesota. Following this he became Dean of the School of Dental and Oral Surgery at Columbia University. After retiring from this position, he spent some time abroad and later resided at Pine Plains, New York, where he devoted his time to writing.

SYLVESTER MOYER.

Dentistry in Canada lost another of her stalwarts when Sylvester Moyer died at Rockglen, Saskatchewan, on December 2nd, 1934.

The late Dr. Moyer was born in Ontario in 1859. He graduated from the R.C.D.S., Toronto, in 1892, and practised in Galt. Later he moved to Saskatchewan. He practised dentistry in Rosetown from 1917 to 1929, then moved to Rockglen.

Dr. Moyer was a past-president of the Ontario Dental Association.

He had a very warm and genial personality, and made and retained a host of friends, who join in extending their sympathy to the bereaved family.

ROBERT MCGILL,

of Mitchell, Ontario, in his fifty-seventh year. He graduated from Toronto University twenty-four years ago, and has practised his profession ever since. He was a prominent member of Knox Church.

WILLIAM MCCARTHY,

of Elora, Ontario, age ninety-four, died in Western Hospital, Toronto, December 23rd.

BENSON G. GILBERT,

of Prince Edward County, Ontario, aged eighty-seven. He was known as the first graduate of the Royal Dental College in Toronto, having received his diploma in 1869.

JOSEPH T. HOULE,

of Shawinigan, Quebec, age thirty-eight. He graduated in 1922 from the Dental Department of the University of Montreal. He was a member of the Knights of Columbus and of the Society of French-Canadian Artisans.

J. C. DOIRON,

of Moncton, N.B., died recently after an illness of several months.

C. F. MORIARTY, M.D.,

of Annapolis, Md. He was assistant director of Public Health for the State of Maryland. Was a graduate of Dalhousie University and a son-in-law of New Brunswick's esteemed dentist, Dr. James M. Magee.

Section Française

L'IONISATION

Par ALCIDE THIBAudeau, D.D.S., Professeur d'Anatomie Dentaire, Université de Montréal, Chef du Service Dentaire à l'Hotel-Dieu, Montréal.

AVANT 1927, le traitement des infections ultra-apicales par l'ionisation était peu en vogue aux Etats-Unis comme au Canada. A Montréal, seul Baxter faisait de louables efforts pour appliquer ce traitement et réclamait des résultats satisfaisants dans 50% des cas. Vers le même temps, Bernard à Paris, expliquait avec une science incontestable, le mécanisme et la logique de ce traitement pour conclure, avec optimisme, à 100% de succès.

Convaincu, par la théorie, de l'excellence du traitement, et intrigué par la différence entre les résultats obtenus par ces deux confrères, j'entrepris à mon tour l'étude de l'ionisation.

Une année durant j'expérimentai, soit avec des appareils sur le marché, soit avec des appareils de mon cru et j'en vins aux conclusions suivantes:

1o—Le Dr. Baxter n'obtient que 50% de résultats efficaces parce que, dans la moitié des cas, sa technique permet des erreurs et empêche l'ionisation d'avoir lieu.

2o—Je me rallie plutôt à l'opinion du Dr. Bernard et je crois la guérison possible dans 100% des cas, pourvu qu'ils soient traitables. Voilà pourquoi je m'étonne que le Dr. Bernard ait obtenu



DR. ALCIDE THIBAudeau
Rédacteur-adjoint de la section française de
ce Journal.

de si remarquables succès en traitant indifféremment tous les cas.

Dès 1928, j'établissais en principe que seule, une technique rigoureusement et méticuleusement suivie assure un entier succès, mais encore à condition d'avoir bien diagnostiqué une dent traitable d'une autre condamnée à l'avulsion.

Je n'hésite pas à répéter mes explications, si simples qu'elles puissent paraître, car je ne voudrais pas que la vulgarisation mal comprise de l'ionisation fût plus de

mal que de bien. En effet, tout comme en céramique, les insuccès attendent tous ceux qui négligent de bien se pénétrer des secrets de l'art. Le prix d'un appareil n'est certes pas le prix du succès, et on aurait tort de s'en rapporter au coût élevé d'un instrument pour croire inutile l'observation des détails minutieux, indispensables au succès de l'ionisation.

L'ionisation, c'est la dissociation d'un corps en ions par un courant électrique.

Ce traitement, qui consiste à faire pénétrer, dans les tissus, des ions médicamenteux, au moyen d'un courant électrique, s'appelle ionothérapie.

Je ne dirai rien ici de la construction des appareils. J'ai constaté que mes descriptions par trop sommaires avaient induit des confrères à se confectionner des appareils pleins de menaces pour la vie de leurs patients. Je me contenterai de dire que si l'instrument est un rectificateur à lampe, il doit être muni d'un dispositif éliminant tout danger possible de court-circuit avec le sol. L'achat d'un ionisateur exige donc que le dentiste s'assure, au préalable, que l'instrument convoité donne toute la sécurité voulue pour le patient.

Voyons maintenant:

10—L'action physique et physiologique des courants.

20—Les médicaments recommandés.

30 — Quelles dents doivent être soumises à l'ionisation?

40—Enfin, la technique rigoureuse à suivre.

10—LES COURANTS.

(a) *Leur action physique.*

Pour faire de l'ionisation, c'est entendu, il faut un courant continu aussi

rectiligne que possible. Un pôle positif et un pôle négatif.

Selon le médicament que nous voulons décomposer, nous appliquons l'un ou l'autre des pôles dans la dent, pendant que le patient tient de sa main le pôle opposé. Avec un médicament électro-positif, il importera alors d'introduire la tige du pôle négatif dans le canal radiculaire; avec un médicament électro-négatif, l'opération sera renversée.

Pour bien comprendre les phénomènes qui se produisent au cours de ce traitement électrolytique, reportons le tout au laboratoire. La dent devient une cuvette dans laquelle on place une solution quelconque, disons pour le moment de l'iodure de potassium IK. Dans la cuvette se trouve une électrode en platine reliée au pôle négatif. La cuvette elle-même, plus ou moins perméable mais conductrice, est reliée au pôle positif. Sous l'influence du courant la molécule IK se dissociera en deux ions I et K. L'un I, électro-positif, s'en ira vers les parois de la cuvette, (en l'occurrence, les canalicules de la dentine et les tissus ultra apicaux) les pénétrera pour tâcher d'atteindre le pôle positif qui est à l'extérieur, (la main du patient). L'autre K. en liberté aussi et électro négatif se dirigera vers le pôle négatif (la tige de platine). En même temps que l'hydrogène s'accumule autour de ce pôle négatif, l'oxygène, grand composant des acides, pénètre la cuvette (ou les tissus) pour atteindre le positif.

Voilà pour l'action principale des courants électriques.

N'allez pas douter de la pénétration des tissus par les ions d'iode. Ensch a fait passer des ions I. d'une cuvette en une autre en se servant d'une grenouille

comme liaison ou conducteur entre les deux cuvettes. Stéphan Leduc, de Nantes, a pris deux lapins qu'il a séparé l'un de l'autre par de grosses éponges remplies d'eau. Sur le flanc libre du lapin de gauche, il appliqua une électrode positive imbibée de sulfate de strychnine et au lapin de droite, le pôle négatif chargé de cyanure de potassium. Il établit le courant et en peu de temps le lapin de gauche présente des convulsions tétaniques de la strychnine tandis que celui de droite meurt empoisonné par le cyanure. On ne pourrait démontrer plus clairement la pénétration même abondante des solutions dans les tissus de l'organisme. En intervertissant les pôles, l'auteur, dans une expérience nouvelle, constate que ses lapins restent en parfaite santé.

(b) *Leur action physiologique.*

Appuyés sur des faits certains, voyons maintenant les *effets physiologiques*.

Les cellules et les espaces intercellulaires sont des milieux qui contiennent une moyenne de 70% d'eau et de chlorure de sodium. C'est dire que ces tissus sont de bons conducteurs. Le pôle positif a sur les tissus une action sédative. Par son acidité il coagule les albuminoïdes, fait contracter et durcir les tissus. Il est vaso-constricteur et germicide. C'est avec ce pôle qu'en 10 minutes on peut faire cesser les périostites les plus aiguës.

Le pôle négatif, par son alcalinité caustique, agit comme le potassium et la soude. Il ramolit, désagrège les tissus. Vaso-dilatateur, il augmente la circulation pour faciliter l'élimination. Il n'est pas germicide, mais c'est autour de lui que s'accumule l'oxygène. Et si l'on en croit Dunlop, ce gaz a une affinité toute particulière pour les tissus infectés. Toutes ces propriétés sont exactement

celles qu'il nous faut pour guérir un grand nombre de lésions péri-apicales.

20—*LES MEDICAMENTS RECOMMANDABLES.*

Si nous ajoutons à ce pôle une solution d'iodure de potassium, cette substance dissociée par le courant fera pénétrer dans la lésion des ions d'iode qui ont à leur tour des propriétés merveilleuses. Paul Duhem, Jean Dubost, Stéphen Leduc, Bourguignon et d'autres nous disent que l'action sclérolysante et résolutive des ions d'iode est une des plus remarquables et des plus constantes qu'il soit donné d'observer en ionothérapie. Il en est ainsi de son action régénératrice et germicide. Ces qualités nous suffisent. A quel titre faut-il l'employer? Théoriquement il est avantageux d'employer une solution à faible pourcentage car, prétend-on, les ions libres y sont plus nombreux! En pratique j'ai toujours employé l'Iode Churchill à cause de son aptitude particulière à subir la capillarité, qualité qui nous assure le remplissage parfait du canal radiculaire. A mon humble avis, l'iodure de potassium donne des rendements tels en médication électrolytique que je doute qu'on lui en trouve de supérieur.

30—*QUELLES DENTS DOIVENT ETRE SOUMISES A L'IONISATION?*

Voici la question délicate. Si comme le Dr. Bernard nous l'a dit, toutes les dents dévitalisées pouvant être traitées, la réponse devient simple. Mais je doute qu'il en soit ainsi. On obtiendra bien une stérilisation complète des tissus et de la dent, c'est admis, mais ce qu'il faut assurer ensuite c'est la permanence de cette stérilité. Or dans les canaux inaccessibles aux instruments et aux sub-

stances obturatrices, les liquides pénétreront pour s'y corrompre de nouveau en offrant aux microbes de passage un asile de toute sécurité. Pour le moment cherchons le juste milieu. L'expérience nous forcera peut-être à modifier notre opinion plus tard, mais aujourd'hui considérons que, seules peuvent être traitées avec succès les lésions situées à l'apex de canaux radiculaires facilement pénétrables et surtout faciles à obturer. En dehors de cette voie, les succès deviennent plus aléatoires.

40—TECHNIQUE.

Elle est relativement simple, mais doit être suivie rigoureusement.

L'ouverture du canal doit être telle que limes et tire-nerfs puissent y pénétrer sans être pliés. Eviter autant que possible l'élargissement mécanique du foramen apical, s'il n'est pas oblitéré.

Les instruments les plus appropriés pour l'élargissement d'un canal, sont les limes de Kerr, employées successivement par ordre croissant. Il faut éviter de sauter des numéros de la série de ces limes, dans le but de gagner du temps. Dans les canaux difficiles il faut s'assurer d'abord que la lime No 1 passe facilement, ensuite le No 2 et non le No 3. Sauter un numéro c'est s'exposer à faire des épaulements et à compromettre son travail. On se rendra ainsi jusqu'au No 6 en utilisant, au besoin, l'acide sulfurique si la dentine est dense.

Le canal ouvert, on fait le nettoyage au peroxyde et à l'eau distillée. L'assèchement à l'alcool n'est pas de rigueur. Par contre, il faut enlever toute obturation, métallique ou non, qui serait en contact avec une dent voisine ou avec la gencive afin de réaliser la condition suivante:

éviter toute perte de courant par déviation ou court-circuit. C'est une des grandes difficultés pour tous ceux qui font de l'ionisation. C'est probablement aussi la principale cause de nombreux insuccès. J'ai trouvé un jour, par hasard, un moyen bien simple d'éliminer cette difficulté. Il suffit de bien assécher à l'alcool le contour de la cavité, de l'enduire de cire adhésive qu'on recouvre ensuite d'une bonne couche de cire grasse. Une solution sur la cire ne se diffusent pas et reste en place. Seulement il ne suffit pas de déposer de la cire collante sur une paroi de la dent, il faut l'y faire adhérer fortement avec un instrument bien chaud. Sans quoi la solution pénètre sous la cire, fait court-circuit avec la gencive et le traitement équivaut à zéro.

On remplit le canal jusqu'à l'apex avec la solution d'iode, en utilisant, pour les dents supérieures, les pointes de Johnson & Johnson. Puis on introduit, sans effort, la tige de platine, le pôle négatif. Il vaut mieux ne pas dépasser la moitié du canal. La tige ne doit pas non plus obturer complètement le canal et empêcher la circulation du liquide. Dans ce but il est préférable qu'elle soit plate. On doit éviter aussi qu'elle touche aux lèvres.

Le patient tient dans sa main la pièce métallique reliée au pôle positif. Pour un patient à la main trop sèche, on enveloppe la pièce métallique d'un coton humecté d'une solution saline. (Intervertir les pôles vous mènerait à un échec certain.) C'est alors seulement qu'on peut se permettre la mise en fonction de l'appareil, après avoir placé son rhéostat au neutre. Il faut tourner graduellement le rhéostat en observant toujours les yeux

du patient. Aussitôt que ce dernier fronce les sourcils, il faut s'arrêter et attendre. En peu de temps, il se produira une analgésie locale qui permettra de pousser le courant un peu plus loin. On élèvera ainsi l'ampérage tant que la résistance du patient le permettra. Ceci ne veut pas dire qu'il soit permis d'abuser de son courage. Il semblerait, à venir jusqu'ici, que le milli-ampermètre, une des pièces les plus dispendieuses de la machine, pourrait être éliminé. Hélas! non, il est indispensable; car pour connaître la durée du traitement, il importe de suivre l'intensité de notre courant. Or des patients tolèrent à peine un demi milli-ampère, alors que d'autres en supportent trois et même quatre.

Dosage.

En divisant 30 par le nombre de milli-ampères, on obtient le temps que devra durer le traitement.

$$\frac{30}{\text{milli-ampères}} = \text{Temps.}$$

Ainsi $\frac{1}{2}$ milliampère demanderait 60 minutes.

Ainsi 1 milliampère demanderait 30 minutes.

Ainsi 3 milliampère demanderait 10 minutes.

J'avoue que je n'oserais me prononcer sur la valeur de cette formule empirique. En effet l'expérience nous prouve que plus la lésion est étendue mieux le patient supporte un ampérage élevé. Alors la longueur du traitement serait en raison inverse de la gravité de l'infection pour être en raison directe de l'intensité du courant? . . . En outre, l'intensité n'est

pas constante pendant toute la durée de l'application, car dans la plupart des cas, on ne peut guère dépasser un milliampère dans le premier 10 minutes pendant qu'on atteint facilement 3 dans le dernier. Alors, comment appliquer la formule?

En pratique, il est conseillé de ne jamais donner moins de 20 minutes de traitement, même avec 2 ou 3 milliampères et de le prolonger jusqu'à 30 et 35 minutes, si l'intensité du courant supporté est faible.

L'obturation du canal radiculaire n'offre pas moins d'importance que le traitement électrolytique lui-même. En effet, que sert de bien stériliser, si on néglige de remplir hermétiquement le canal jusqu'à l'apex, afin de prévenir la réinfection.

De toute nécessité il importe d'obturer le canal jusqu'à l'apex. On commencera donc par le débarrasser de la solution d'iode en lavant abondamment à l'alcool. On assèche ensuite avec pointes de Johnson, tige chaude, air comprimé, etc. Il faut ensuite baigner le canal d'un vernis très léger fait de colophane et de chloroforme. Ce fluide très diffusible pénétrera facilement dans les plus petits foramens et facilitera ensuite l'introduction de gutta-percha. Le remplissage du canal radiculaire peut se faire, je le concède, avec diverses substances mais à condition qu'elles ne se contractent pas en durcissant, qu'elles ne soient pas poreuses ou pénétrables.

516 rue Sherbrooke est
Montréal.

LA SOCIÉTÉ DENTAIRE DE MONTREAL

LA société Dentaire de Montréal a tenu sa dernière réunion le 29 novembre 1934.

Après les affaires de routine, le président, le Dr Renaud, présente le conférencier, le Dr J. Lane Charpentier.

Celui-ci fait part de son expérience dans le traitement de la pyorrhée par la méthode de Dunlop. Après avoir

indiquée les précautions nécessaires avant tout traitement de ce genre, il explique que ce procédé Dunlop consiste dans l'application d'une paraffine médicamenteuse sur les gencives, suivie d'infiltration d'oxygène au moyen d'un appareil spécial.

Le Dr Alcide Thibaudeau remercia le conférencier.

NOS COLLABORATEURS

LA DIRECTION du Journal de l'Association Dentaire Canadienne a obtenu la précieuse collaboration du *Docteur Henri Villain*, président de l'Association Générale Syndicale des Dentistes de France; du *Docteur Marcel Darcissac*, stomatologiste de l'Hôpital Laënnec, lauréat de l'Académie et de la Faculté de Médecine de Paris; du *Docteur Albert Joachim*, président du quatrième Congrès Dentaire National Belge; et du *Docteur François Ackermann*, célèbre médecin-dentiste de Genève.

La générosité franche et spontanée avec laquelle ces confrères ont accepté de devenir nos rédacteurs correspondants, pour leur pays respectif, nous honore grandement.

Le conseil d'administration du Journal éprouve un grand réconfort à l'idée que de telles personnalités contribueront à rendre notre journal plus instructif. Nous traverserons ainsi la période critique du début, solidement secondés de la science et de la sympathie de nos confrères français, belges et suisses.

A ses rédacteurs d'outre-mer la pro-

fession dentaire du Canada présente son plus cordial salut.

La section française de notre revue s'est aussi assuré la collaboration du *Docteur Alcide Thibaudeau*, professeur à la faculté de Chirurgie Dentaire de l'Université de Montréal.

Homme d'oeuvres infatigable, chercheur avide de science, professeur écouté, conférencier au verbe facile, le Docteur Thibaudeau guidera désormais tout un essaim de jeunes travailleurs. Il vaincra certaines timidités, bridera des audaces mal contenues, entraînera des indécis, remettra en pleine activité de beaux talents en train de rester sous la tente sans jamais donner leur mesure.

Sous l'impulsion de cet animateur convaincu, plusieurs de nos confrères canadiens-français viendront se grouper autour de l'oeuvre du journal, pour lui fournir périodiquement des travaux bien étoffés.

La publication mensuelle de notre Journal compte uniquement sur les services bénévoles de certains confrères. Nous leur imposons une tâche pénible,

parce que nous réclamons d'eux tous leurs loisirs.

Pendant que quelques-uns des nôtres se sacrifient ainsi pour doter notre profession d'un bulletin digne de ses membres, les autres plus libres et, peut-être même, mieux doués se contenteront-ils de demeurer indifférents, en simples

spectateurs, devant l'effort des pionniers de cette oeuvre? Tout nous laisse croire qu'il n'en sera pas ainsi. Pour lents que soient les débuts, des nouvelles fort encourageantes nous viennent de toutes parts. L'année ne s'écoulera pas avant que plusieurs donnent des preuves évidentes de leur bon vouloir.

LE CINQUANTENAIRE DE LA SOCIÉTÉ D'ODONTOLOGIE DE PARIS

LE 2 et 3 février dernier, on a fêté à l'Ecole Dentaire de Paris le cinquantenaire de la naissance de la Société d'Odontologie.

A cette occasion, il y eut deux séances dont l'une consacrée à des communications scientifiques et l'autre à des démonstrations pratiques. Le tout se termina par un banquet au cours duquel deux vétérans de la profession furent fêtés à leur juste mérite: M. Georges Viau et M. le Docteur Maurice Roy,—le premier à titre de fondateur de la Société d'Odontologie, le second, parce qu'il en fut l'administrateur incomparable pendant plus de quarante ans. A chacun de ces confrères, l'on présenta une plaquette de bronze de grande dimension, à son effigie.

S'il est des confrères canadiens qui désirent s'associer, bien que tardivement, à cette célébration, ils peuvent le faire en souscrivant de l'une des deux manières suivantes:

1o.—Participation simple aux deux grandes plaquettes offertes à MM. Viau et Roy . . . 50 frs.

2o.—Souscription spéciale donnant droit aux plaquettes réduites (1). La pièce . . . 30 frs.

Toute souscription doit être adressée à M. Fontanel, trésorier, 45, rue de La Tour d'Auvergne—PARIS (9e).

La rédaction du Journal de l'Association Dentaire Canadienne se réjouit du demi siècle d'existence de la Société d'Odontologie.

Le témoignage de gratitude que cette Société a donné à ses vétérans, MM. Viau et Roy, fait l'objet de notre admiration. Ses guides des premiers cinquante ans, la Société d'Odontologie les a coulés dans le bronze, afin d'être bien sûre qu'ils parcourront avec elle la seconde étape conduisant au centenaire. C'est souvent dans le bronze que les animateurs perpétuent leur oeuvre bienfaisante, la Société d'Odontologie l'a compris.

Que l'heureuse Jubilaire, que ses deux héros daignent agréer nos cordiales félicitations!

(1) Des réductions de ces plaquettes ont été réservées à ceux des souscripteurs qui désireront les acquérir.

La Rédaction.

APPRECIATION DU JOURNAL ET MOT D'ORDRE DU PRESIDENT DU COLLEGE DES CHIRURGIENS- DENTISTES DE LA PROVINCE DE QUEBEC

DURANT une énergique et heureuse campagne électorale par tout le pays, un de nos chefs politiques, à l'esprit pénétrant, appuya particulièrement sur le fait que les prières seules ne pouvaient donner la victoire, en période électorale. Ceci me rappelle que la mise sur pied du Journal de l'Association Dentaire Canadienne est due aux infatigables efforts de ceux qui, depuis nombre d'années, ont travaillé, sans répit, à convaincre leurs confrères de l'absolue nécessité d'un journal dentaire transcanadien.

Leur but est atteint. Quel rôle nous reste-t-il à jouer, puis-je vous demander?

La naissance de ce Journal me donne, comme dentiste, de la fierté et de la satisfaction, et je nourris le désir ardent de

venir en aide aux pionniers de cette entreprise pleine de difficultés. Bien que réussie, leur tâche n'est encore qu'à son début, et seuls les efforts réunis de l'élite des dentistes en notre pays peuvent donner à cette revue dentaire le prestige et l'influence désirés.

Confrères de langue anglaise et de langue française de cette province, les administrateurs et les rédacteurs du Journal de l'Association Dentaire Canadienne réclament votre collaboration. Mettez l'épaule à la roue, je vous prie, généreusement et sans hésitation.

—G. GUELPH ARMITAGE,
Président du Collège des
Chirurgiens-Dentistes de
la Province de Québec.

UN EDITORIAL DU JOURNAL DE L'ASSOCIATION DENTAIRE DE L'ONTARIO

DANS son numéro de janvier, le Journal de l'Association Dentaire de l'Ontario salue avec courtoisie le début de notre Revue.

L'article démontre l'importance pour les dentistes de posséder, outre leur organisation provinciale respective, une association fédérale ou centrale. Que de problèmes ne pourraient être résolus par les seuls Collèges provinciaux des Chirurgiens dentistes. Pour cette raison, le Journal de l'Association Dentaire de

l'Ontario invite tous les dentistes du Canada à appuyer loyalement et leur Bureau provincial et leur Association nationale. Très bien!

Nous remercions nos confrères ontariens pour cet article constructif dans lequel domine un désir ardent d'unir tous nos efforts, en une harmonieuse entente, pour le bien de notre profession et de la société.

—P. H.

L'ASSOCIATION DENTAIRE CANADIENNE ET LA RESTAURATION SOCIALE

LES dentistes du Canada s'intéressent non seulement au progrès scientifique mais aussi aux questions économiques et sociales du pays, comme en témoigne la lettre ci-dessous adressée le vingt mars, 1933, au Premier Ministre du Canada.

Les récentes décisions prises à Ottawa démontrent l'opportunité de cette requête des dentistes du Canada.

Québec, 20 mars, 1933.

A L'Honorable R. B. Bennett,
Premier Ministre,
Edifice du Parlement, Ottawa.
Monsieur le Premier Ministre,—

Le Conseil d'Administration de l'Association Dentaire Canadienne, désireux de suggérer des mesures constructives qui puissent ramener notre pays à des conditions normales, demande le privilège de soumettre à votre considération et à celle de votre gouvernement la résolution suivante:

—*Considérant* que la crise financière présente a fourni une occasion toute spéciale pour l'examen critique de la structure économique de certaines de nos institutions canadiennes;

—*Considérant* que de nombreuses plaintes s'élèvent de multiples endroits au CANADA contre les lois régissant l'organisation des compagnies, la modification de la capitalisation de certaines entreprises déjà en opération, les compagnies de fiducie préposées à la surveillance des intérêts des porteurs d'obligations, etc., et que ces plaintes laissent croire que des corrections urgentes s'imposent dans notre régime économique;

—*Considérant* que l'Association Dentaire Canadienne désire aider nos hommes d'Etat dans leurs efforts pour l'application d'un remède à une des importantes causes de la détresse présente, et que, de plus, elle veut la disparition, l'annihilation des arguments de ceux qui veulent la ruine du régime capitaliste, arguments qui, à l'heure présente, fortifient d'une manière inquiétante les appels faits à la population du CANADA pour des changements radicaux;

—*IL EST RESOLU*, par la présente, afin d'éviter la perte d'un régime sain dans sa source et ses principes, mais menacé de plus en plus de désapprobation générale, que l'Association Dentaire Canadienne suggère, comme fort opportune au Gouvernement du CANADA, la création d'une Commission Nationale composée d'Economistes, de Juristes et de Professionnels, indépendants de tout groupe politique ou financier, avec mission d'étudier notre régime économique afin de pouvoir recommander à la Chambre des Communes les modifications requises pour la correction des vices de notre régime financier. *Signée*

L'ASSOCIATION DENTAIRE CANADIENNE.

Cette idée de suggérer au Gouvernement Fédéral la formation d'un Conseil National auquel serait confié le devoir de trouver les mesures nécessaires pour mettre fin aux abus évidents qui prévalent maintenant dans la haute finance, a reçu l'approbation entière des Associations professionnelles ci-après énumérées:

L'Association Dentaire de l'ONTARIO;

Le Collège des Chirugiens-Dentistes de la Province de QUEBEC;

Le Collège des Chirugiens-Dentistes de la COLOMBIE BRITANNIQUE;

L'Association Dentaire de l'ALBERTA;

Le Conseil des Chirugiens-Dentistes du NOUVEAU-BRUNSWICK;

Le Collège des Chirugiens-Dentistes de la SASKATCHEWAN;

L'Association Dentaire de L'ILE du PRINCE-EDOUARD.

Cette initiative de notre Association n'est inspirée par aucun autre motif que celui de venir en aide à nos dirigeants et à notre pays, en ces heures difficiles.

Ce projet, nous l'espérons, s'accordera avec vos vues, de même qu'avec celles de vos collègues distingués.

Veuillez agréer, Monsieur le Premier Ministre, l'expression de mes sentiments les meilleurs et me croire,

Votre humble serviteur.

PHILIPPE HAMEL,
Président de l'Association
Dentaire Canadienne.

IN MEMORIAM

DOCTEUR J. H. BOURDON

ETIRE à la campagne depuis plusieurs années, le Docteur J. H. Bourdon vient de s'éteindre dans sa paisible retraite. Il était âgé de 77 ans. Dès 1893, il était secrétaire de l'ancienne Ecole Dentaire de la Province de Québec, et membre du bureau des gouverneurs. Cinquante années durant, il pratiqua sa profession avec un enthousiasme peu ordinaire. Chercheur émérite, il fut un des pionniers de la dentisterie professionnelle chez l'élément français. Estimé du public et de ses confrères, il s'employa à assurer à notre profession une meilleure orientation sociale, et par son sens pratique, il devint l'instigateur de l'école



FEU DR. J. H. BOURDON.

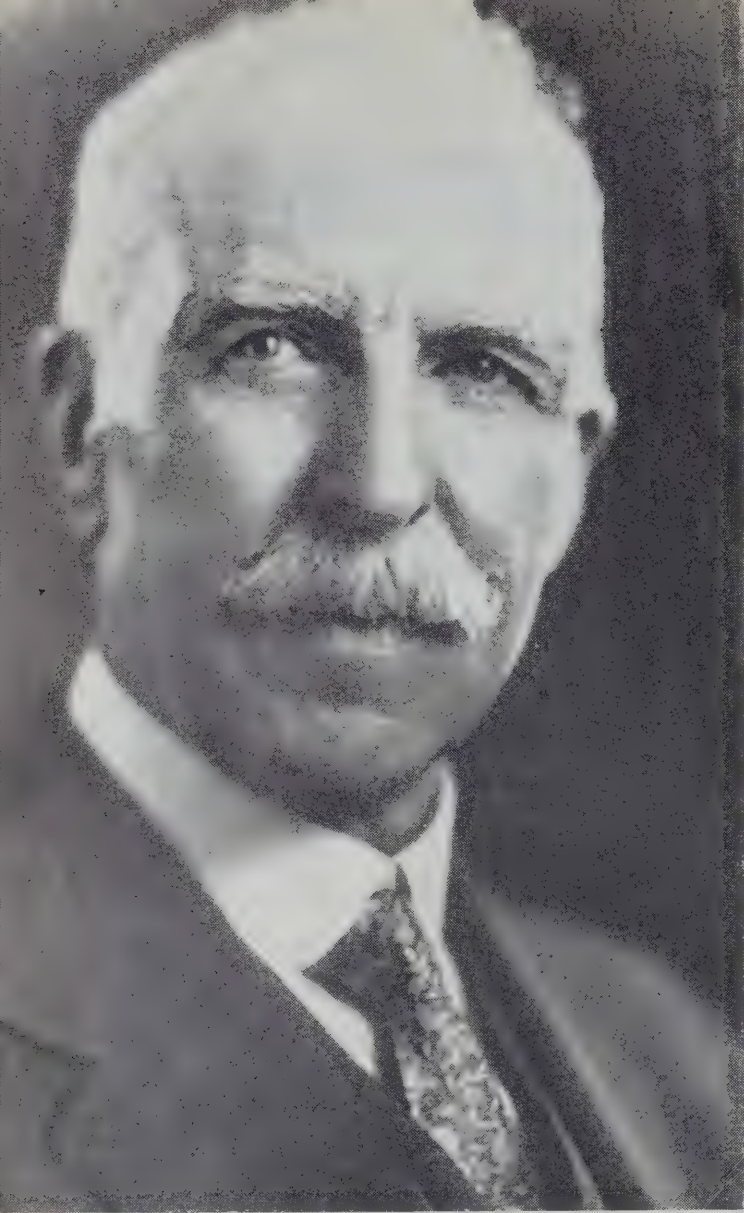
dentaire française de Montréal. Il laisse à sa profession un souvenir que l'Histoire rendra impérissable.

La rédaction.

The MARSHALL FIELD & COMPANY IDEA



TO DO *the right thing, at the right time, in the right way; to do some things better than they were ever done before; to eliminate errors; to know both sides of the question; to be courteous; to be an example; to love our work; to anticipate requirements; to develop resources; to recognize no impediments; to master circumstances; to act from reason rather than rule; to be satisfied with nothing short of perfection.*



JAMES M. MAGEE, D.D.S., F.I.C.D.

Saint John, New Brunswick.

Past-President of the Canadian Dental Association.

President of the Dominion Dental Council.

Past-President of the New Brunswick Dental Society.

First dentist registered in the Province of New Brunswick, and now a life member of the N. B. Dental Society, an honour conferred in recognition of the completion of fifty years in active practice.

Retired Lieut.-Colonel of the Canadian Army Dental Corps . . . churchman, author, golfer, curler, director in a number of public services, and still in active dental practice.

THE JOURNAL

of the CANADIAN DENTAL ASSOCIATION

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No. 4

DOLLARS AND SENSE IN DENTURE CONSTRUCTION

By JOSEPH N. STEWART, D.D.S., Hamilton, Ontario.

LOOKING back over the clinics, lectures, and post-graduate courses that I have attended, I have come to the conclusion that our methods of doing things are not flexible enough to embrace all our needs. We are constantly trying to fit a round plug into a square hole.

Surely both patient and operator can meet on some common ground where the patient can choose a service in keeping with his ideas and pocketbook, and still give the operator a proper remuneration for the type of service rendered.

It is so easy to do things as a matter of habit without thinking why. We travel along one path so long that we find ourselves in a rut so deep that it is going to take many a jolt and jar to get the old machine on to a smooth and wider highway.

In denture construction, the average dentist has taught his patients to expect a minimum service at a minimum fee, as though it were a commodity. Granting that it is a commodity, do we appreciate its value as much as any common article that could be purchased at the store? Let us suppose someone was in need of a hammer or saw. Would he go to the ten cent store for one? I am afraid not, because the average person has some knowledge of hammers and saws. Any-

one knows that a ten cent hammer is worth only ten cents and that a dollar hammer is worth a dollar. A carpenter wouldn't think of buying a cheap saw simply because it is a saw. He will insist on an article that will give him the maximum amount of satisfaction.

In everything one purchases a great variation is found in price and quality. The name of the article means very little compared with the name and reputation of the manufacturer. The public is well aware of true differences of value, but when we consider denture construction we find a lamentable condition, which has been created by the dentists themselves. The average man spends little or no time educating his patients that there are differences in plate work. The public is all right; the guilty parties are the dentists themselves. The average man, in setting a fee, thinks more of competing in price with the man down the street, than he does of rendering a service that will suit the case at hand. There are so many factors to be considered in every case, that it is not fair to think of a denture as just another set of teeth. No two patients are alike, either in the physical structure of the mouth or in temperament and adaptability. No two dentists have the same qualifications in their ability to

serve, or in honesty of purpose. Let us analyse some of the factors to be considered:

FACTORS TO BE CONSIDERED

1.—Are the physical conditions of the mouth favourable or unfavourable, and to what extent? How much extra time will the dentist have to spend to insure comfort and satisfaction?

2.—Is the patient young or old, or intolerant of any discomfort?

3.—How will he react to wearing an artificial denture? Do foreign things in his mouth nauseate him? Will he co-operate with you? Remember your work will be unsatisfactory unless you have his co-operation.

4.—What appreciation of dental services regarding comfort and appearance has he? This is VERY important. One will willingly pay more for a handbag than for a set of teeth; while another would rather have a fine set of teeth than a fur coat or an automobile. Remember, everyone has the right to spend his money as he wishes. Many people will travel two or three hundred miles to catch a couple of dollars worth of fish. They will go an equal distance or more to see a football match or a prize fight and feel they've had their money's worth, and still they may not appreciate values in dentistry, due to the fact that the dentists, with whom they come in contact, have not educated them to a proper appreciation of appearance and comfort, which to them should be priceless.

5.—Has the patient ability to pay? This is a factor, but I think a secondary consideration, as most people will find some means of procuring what they sincerely desire. I will grant that the

wealthy who appreciate dentistry will willingly endeavour to procure the best.

Now let us look at it from the patient's viewpoint:

THE PATIENT'S VIEWPOINT

1.—What qualifications and training has the dentist?

2.—Is he honest and reliable?

3.—Has he an artistic ability, or do all his patients get very much the same set-up, a regular set of teeth, so to speak?

4.—Does he actually use more care and time and a better technique on expensive teeth than he does on the less expensive ones?

5.—Has he proper equipment to render a first-class service? Ability comes first, and equipment is only a means whereby he can express it to the fullest extent. A person with marked ability can make a better set of teeth with snap impressions and a plain line articulator than a dentist who is lacking in ability. That does not say that equipment is not necessary; in fact, proper equipment is essential to enable the operator to do the finest type of work. Good equipment requires a first-class man to handle it. A first-class equipment, on the other hand, cannot produce fine work with a poor operator. According to my observations, I will venture to say, that not more than one set in twenty-five dentures are set in absolute centric occlusion. Not more than one in a hundred are set in the curve of spie, peculiar to the individual who receives them. Not more than one in a thousand has the occlusal surfaces re-ground or milled into proper occlusion; and still with all these imperfections the patients seem to tolerate them.

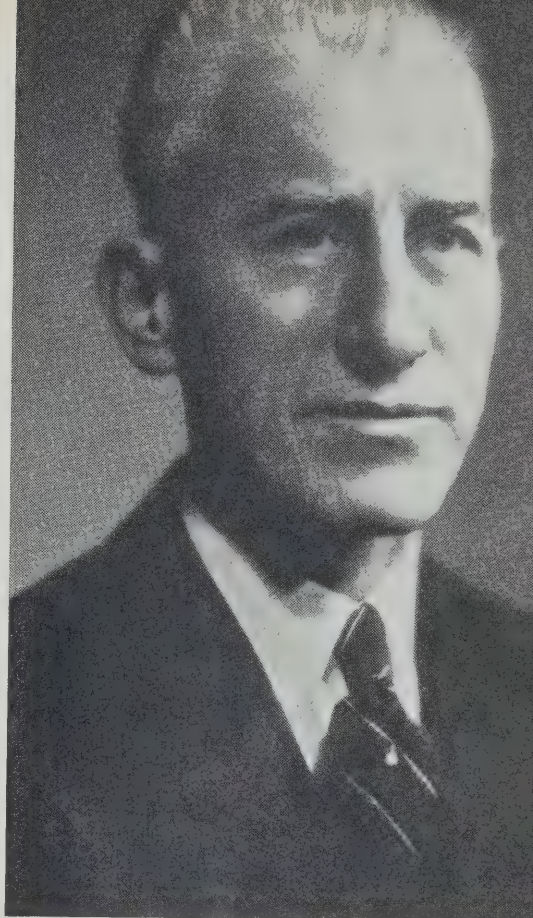
JOSEPH N. STEWART

Not more than one in a hundred dentists has the ability to give this full measure of satisfaction, simply because they cannot see themselves receiving a fee that would warrant their spending the time to do their best.

THE GOAL

No one is batting one hundred per cent, but if we have the proper goal ahead of us we certainly can improve our work and give greater satisfaction to the patient. Do not treat every case in the same way. Your extra efforts and time may not be appreciated. In other words, "do not cast your pearls before swine". There are plenty of people who do appreciate and are willing to pay for that service.

Personally I cannot agree with those who preach that we should render only the highest type of service and everyone should receive it. It makes me wonder if they follow what they preach. In feeding their help, or the needy, do they trot out their finest china and silverware and serve filet mignon and all that goes with it, or do they give them something cheap but substantial? In dentistry I feel that everyone should be served well, but in keeping with the conditions. A proper understanding should exist among the



dentists of a given locality, and a minimum fee established. This would eliminate cut-throat practices and also help those just starting, as well as those who haven't the courage to stand on their own feet, to come under group protection. I remember well the feeling of comfort I received from the schedule of fees that existed in Hamilton when I started. It was a wonderful help to me; and I honestly believe that many a good man fails to develop simply because the ground is not sufficiently fertile to produce growth. Remember, the fertility of the soil is dependent upon the dentists, not upon the public. Proper dental education is the fertilizer, and it is up to each individual dentist to do his share.

I am firmly convinced that the men who are established in practice should

give the younger men all the help they can, to establish and maintain a minimum fee that will be profitable to them, and also to render every assistance to help them improve their work.

SUMMARY

There are many ways of doing denture work, and fees should be in relation to the effort. The following are some of the methods:

IMPRESSIONS

- (a)—Snap impression; compound or plaster.
- (b)—Compound impressions slightly muscle trimmed.
- (c)—Compound and plaster wash impressions.
- (d)—Sectional compound impressions fully muscle trimmed.

MODELS

- (a)—Plaster.
- (b)—Stone.

BITE-RELATIONS

- (a)—Mush bite in wax.
- (b)—Mush bite with compound blocks.
- (c)—Compound blocks adjusted to proper bite position, secured with wax or staples.
- (d)—Perfect fitting blocks, using Gysi tracing for centric relation.
- (e)—Recording protrusive bite.
- (f)—Taking plaster bites as advocated by Stansbery.

ARTICULATORS

- (a)—Plain line.
- (b)—Snow or similar type.
- (c)—Hanau or Gysi adaptable.
- (d)—Stansbery.

683 Main Street East.

SELECTION OF TEETH

- (a)—Cheapest.
- (b)—Best.
- (c)—Best but one, selected from several sets to break up the monotony as regards moulds and colour.
- (d)—Best, but modified by grinding and staining.

SET-UP

- (a)—Ordinary set-up for plain line articulator type of work.
- (b)—Using arbitrary curve of spie.
- (c)—Following Hanau registration.
- (d)—Following registration of Stansbery tripod.

WAXING

- (a)—A plain wax up.
- (b)—Festooned and with rugae.

MATERIALS FOR BASE

- (a)—Vulcanite.
- (b)—Compressible materials.
- (c)—Luxene.
- (d)—Stainless steel.
- (e)—Gold.

CORRECTION OF OCCLUSAL SURFACES OR RE-GRINDING

- (a)—Leave case as it comes from press or vulcanizer.
- (b)—Spot grinding with articulating paper.
- (c)—Re-grinding arbitrarily.
- (d)—Re-grinding as recommended by Hanau or Stansbery.

In summing up, with all these methods, you can readily see that we are amply provided with the means whereby we can meet all requirements satisfactorily to both patient and operator.

DENTAL CONVENTIONS

ONTARIO DENTAL ASSOCIATION, May 20-22, in Toronto.

WESTERN CANADA DENTAL SOCIETY, June 3-5, in Calgary.

AMERICAN DENTAL SOCIETY OF EUROPE, July 31-August 3, in London.

AMERICAN ACADEMY OF PERIODONTOLOGY, October 31-November 2, in New Orleans, La.

AMERICAN DENTAL ASSOCIATION, November 4-8 in New Orleans, La.

*NEW BRUNSWICK'S first
registered dentist, after an ex-
perience of over fifty years,
speaks on the dental matrix.*

THE MATRIX

By JAMES M. MAGEE, D.D.S., Saint John, New Brunswick.

AS long as teeth continue to develop caries the services of the members of the dental profession will be required to repair the ravages resulting from that insidious disease.

Up to the present time restorations, other than metal, have failed to remain resistant to the oral secretions and abrasions therefore, until the long-sought-after material is discovered, our efforts will be directed to such improvements in technique as will enable us to accomplish better aesthetic results, and more nearly perfect restorations, with a minimum of distress. The more quickly an operation may be completed the less distress is experienced. The longer the operation, the more intensified is the distress of the patient both physically and mentally.

Inlays of metal and of porcelain are always surrounded by a film of cement which is vulnerable in oral secretions, whereas, a metal restoration which fits tightly against all cavity margins, is indissoluble in oral secretions. Cavities which are readily treated, because easily accessible, offer no obstacles to any ordinary operator, but we frequently find, especially in the posterior teeth, cavities which sometimes tax our capabil-

ities to the utmost limit. They are usually proximo-occlusal cavities which call for the use of a matrix, and it is this matrix that I desire to discuss particularly.

Matrices of a variety of material, such as steel, nickel-silver, copper, tin, alloys of these (in the form of brass and german silver) celluloid, quill and wood, have been employed in the process of restoring to contour, with filling material, portions of teeth lost through fracture, caries, erosion or attrition. Quill and wood may be considered as obsolete in present day practice although many eminently satisfactory restorations at the hands of skilful operators have been performed in days long past.

I can safely say, that since the advent of the cast inlay in general practice, manipulative skill among our more recent graduates does not measure up to the standard of development which was in evidence before that time. Especially is this applicable to restorations of gold foil.

MATRIX FOR FOIL FILLINGS

As it was imperative that lost contours should be re-established, the ingenuity of the operator was taxed in proportion to the difficulties to be overcome. That he sometimes measured up to the test, is in-

dicated by some gold restorations which I examined but a few months ago. Except for the effects of attrition which has marred their surfaces somewhat, they give every indication that they will be buried with the teeth in which they were inserted fifty-two years ago. Contours of proximo-occlusal cavities are at the present time quite simply completed by inserting cast inlays, with great saving of time, and distress to the patient, but there are cavities in anterior teeth which may be filled with foil, using a matrix, with more pleasing aesthetic results (since the preparation for the inlay demands greater sacrifice of tooth structure) and with equal permanence.

Within reasonable limits as to comparison, the larger the cavity the more quickly it may be filled with foil. If a correctly fashioned and properly adjusted matrix is employed, you have ample room wherein to place large cylinders which provide a considerable thickness of foil between your plugger and the tooth structure. Your operation resolves itself into the filling of a simple cavity with a condensation such as would be employed in filling an occlusal cavity.

The operator who restores the contour of a proximo-occlusal cavity without a matrix, must either pack his foil tightly against the adjacent tooth or use cohesive foil. Before the cohesive property of annealed foil was discovered, all gold restorations were made with "soft" gold which was packed entirely by heavy hand pressure using serrated instruments. A limited amount of cohesion developed during the packing process since the sharp serrations left clean bright depressions into which the next layer of foil became interlocked, a union partly mechanical and partly cohesive.

COHESIVE VERSUS SOFT FOIL FILLINGS

The late Dr. Charles Gerrish, of Exeter, New Hampshire, gave me an apt illustration of the difference between a cohesive foil filling and a soft foil filling. He was a most thorough operator and knew how to emphasize his point. He said "Suppose you wish to confine liquid in a bottle, you may use either a glass stopper ground to fit the neck of the bottle or you may use a soft 'cork'. If your glass stopper fits, it does its work. Your cork stopper pressed tightly into the neck of the bottle is equally effective. You may pick your soft sealing cork plug to pieces but it is equally effective with your glass stopper in preventing leakage. When I place my cylinder of foil in my cavity there are several layers of gold between my plugger and the tooth wall and when I pack it tightly (when I say tightly I mean tightly, for I use considerable force) against the cavity wall overlapping the cavity edge, it acts exactly as the soft cork does in preventing leakage from the bottle.

"If your margins are perfectly protected and your foil packed tightly against the floor and all cavity walls, it matters little if the heart of the filling lacks perfect condensation. If your filling is exposed to occlusal stress you will finish it, of course, with a layer of cohesive foil malletted to hardness. That is only common sense. We cannot expect soft gold foil to withstand the stress of mastication though we know it will not permit leakage. Now can you be so sure that your cohesive foil seals your cavity walls?"

The question of time is most vital both from the viewpoint of the patient and that of the operator. The prepara-

tion of the whole field of operation when a proximo-occlusal gold contour restoration is planned, consumes some considerable time, where a matrix is to be used, and seemingly to the uninitiated much time is wasted before the operator begins his filling operation.

I listened to a portion of a conversation between two clinicians, each demonstrating his procedure for restoring a proximo-occlusal contour of a bicuspid, one "A" using a matrix and the other "B" operating without a matrix.

B, who used cohesive foil, said, "I will have my restoration half done before you get started"; A answered "Yes! I won't question that, but I will finish my operation first."

He did, and I may add that his patient left the chair in a much less fatigued condition than did "B's" patient.

I should like at this point to pay tribute to George C. Anisunth, of Boston, Mass., the patentee of the first scientific rubber dam punch (my "A" just referred to) who demonstrated to me in his own office the effective employment of the steel matrix and the "Perry" two bar separator.

I shall try to convey to your minds a picture of one of his preparations.

There did exist in the United States a group of operators known as the "G. V. Black Club" — among them were Waedelstadt, Searle, Claek and Conzett. I do not know how many are still living but I can testify to their skill for I have watched them operate, from the application of the dam until the dismissal of the patient.

All their operations that I witnessed were contour restorations without a matrix and no one who ever inspected them would fail to admire the completed fill-

ing, *but* an equally beautiful restoration could have been made with greater ease to both patient and operator had the properly applied matrix been employed.

Let us assume that there are two operators with opposing views as to the best procedure for a proximo-occlusal restoration in gold, having cavities in identical locations upon which to operate, one whom we will call "A" who advocates the use of the matrix, and the other whom we will name "B" who does not employ the matrix.

We will assume that their preparations are complete to the point where they are about to insert the filling material in cavities as nearly alike in preparation as one could conceive and of equal size. There is no controversy between them regarding a scientific preparation including lines of cleavage and "extension for prevention" of recurrent caries.

A has a "Perry" two-bar separator, adjusted so the jaws rest upon both teeth in the operating field, the one with its prepared cavity and the other its proximate neighbour. He fashions a matrix cut from a sheet of thin steel (.003 is ideal for his purpose) so that it passes as far beyond the cervical margin of the cavity as possible without causing any pain or injuring the gum tissue, and extending both labially and lingually to the contour of the tooth so that the jaws of the separator can grasp and hold it firmly in position as he turns the bar to effect that end. As there are six separators in the set, it is presumed that the proper selection has been made to fit the particular space involved. If there is a space in the cervical portion of the interdental space where the gum tissue has been temporarily pushed out of place by the enveloping rubber dam, he tucks a small piece

of softened base plate gutta-percha, temporary stopping, or modelling compound between the matrix and the proximal tooth and if the cavity has extended inordinately lingually and labially he may further support the matrix with a mass of base plate gutta-percha or modelling compound. His case, now ready for the gold, will disclose the matrix fitting the cavity margins perfectly and extending occlusally slightly beyond the normal bite.

Cylinders as large as possible are placed in the floor of the cavity, and serrated pointed large pluggers, using hand pressure, are employed to force the gold tightly into all angles, including that formed between the matrix and the cervical border of the cavity. When the contact point is approached, cohesive foil is malletted against the matrix, and contour is completed with a sufficient thickness of malletted cohesive foil, to withstand the stress of mastication.

Should caries have extended so far subgingivally as to necessitate the removal of the entire mesial enamel, it may readily be observed how difficult it will be to finish a filling in that particular section where a surplus of gold must extend into the interproximal space, unless a matrix is used to limit its encroachment, and in which latter case, how easy it is to finish with a flat burnisher, after removal of the matrix.

The making of gold fillings with foil has become almost a lost art, and it would seem that the time was fast approaching when our dental schools should stress the development of that manipulation dexterity, so necessary for that particular class of operation. So much for the matrix for the gold filling!

MATRIX FOR AMALGAM FILLINGS

For amalgam fillings in proximo-occlusal cavities in bicusps and molars, the same *fit* is desirable if we are to achieve the best results with our matrix. While quite as good results are obtained with an "ivory" matrix and retainer in a number of favourable cases, there is not the same universal certainty of success that accompanies the sheet steel (.003) matrix, fashioned for the particular case in hand. After the matrix has been placed and supported by whatever adjuncts you deem it is necessary to employ, amalgam is packed with very vigorous pressure until a considerable surplus exists. Some of this is carefully cut away and the matrix is allowed to remain until the amalgam has hardened somewhat. Some alloys set more quickly than others, therefore no particular time can be stated as being the correct time to wait for hardening. Your own experience will determine when the amalgam is hard enough not to fracture on plucking out (sideways) the steel matrix.

No matter how tightly a matrix may be fitted to the tooth, the vigorous packing will force a slight surplus of filling material beyond the cavity margins. On removal of the matrix we immediately carve away this slight excess of material which is now in the best condition for carving. If we use a very thin, very sharp, stiff, carving instrument for the interdental space we may secure a perfect contour that will defy recurrent caries. Occlusal contour should then be routine treatment. If your procedure has been correct, the passing of dental floss between the teeth will advise you by its *snap* past the contact point that you have

made a correct restoration. Your matrix has commanded success.

Nickel-silver, .001 in thickness, is indicated where cavities have developed in the proximal spaces of deciduous molars, and where copper amalgam is selected for restorations.

There are certain cavities, viz.: buccal distal cavities in upper third molars to which a matrix cannot be applied, and there are other cavities situated where adjacent teeth have been extracted. In some of these cases the Ivory matrix serves an almost ideal purpose. There are others again which may be filled best by using a copper band matrix, while there are still others where a hand matrix is indicated. A band matrix may be either a soldered band or a strip of metal (I prefer thin copper since it is quite ductile) fitted to the tooth and bound securely into place, with dental floss or gilling twine. The soldered band matrix must be split before it can be removed, while cutting the floss liberates the other.

THE HAND MATRIX

A hand matrix made from an old mirror back may serve some purposes, but one (or a pair, right and left) may be made by soldering to an old mirror shank a section of fairly heavy copper wire, hammered flat and wide enough to serve the conceived purpose. These will withstand innumerable bendings to fit various cases, for it takes but a minute to re-anneal the instrument. The hand matrix can never be held in as equally rigid contact with the margins of a cavity as one supported either by a clamp, or other means already mentioned, but a satisfactory support can usually be obtained by resting the shaft of the in-

strument on a convenient tooth while packing your amalgam. The hand matrix is eminently well adapted for buccal distal and lingual distal cavities in posterior teeth where plastic material is to be introduced.

MATRIX FOR SYNTHETIC PORCELAIN

Responsibility for the lack of technique in handling gold foil, may be divided between the cast gold inlay and the silicates. A matrix is indicated for most of the silicates because nearly all restorations of the upper anterior teeth are made of this material and the cavities are located mostly in the proximal spaces.

While this synthetic porcelain will never endure like a well-made gold restoration we are well advised in its use because of its aesthetic appearance. In the filling of all proximal cavities with this material, a matrix is indicated. Where there is ample space, a celluloid matrix serves an excellent purpose, for being in strip form, the ends may be grasped and drawn tightly against the tooth, and pressure be maintained during the preliminary setting. That portion of the filling which requires no trimming is left with a bright smooth surface. Whether or not it is more resistant to both attrition and dissolution from the oral secretions, I have not been able to determine, but its appearance suggests that it has that characteristic, so we console ourselves with the hope that it is.

Where the space will not permit a celluloid strip to enter or where a cavity has extended subgingivally and cannot be kept dry otherwise, "nickel-silver" .001 in thickness proves almost ideal. Fitted to the contour of the portion of the tooth opposite that from which our

filling material is to be packed, and supported from dislodgment by a mass of modelling compound, it leaves a smooth bright surface after its removal. Here it may be interjected that the rubber dam is indicated for all silicate restorations.

Block tin rolled to a thickness of about .003 bright and smooth as it comes from the roller, serves an excellent purpose because of its extreme flexibility, in cases where a prominent contour of the tooth we are operating upon, prevents a stiffer material from being closely adapted.

42 *Wellington Row.*

It is a rare occasion when a matrix is required for a gutta percha filling, but it is sometimes necessary in damming moisture, either blood or other fluid, from entry into subgingival cavities.

A sheet steel matrix is most essential in cases where temporary cements are applied in sealing dressings into cavities, especially those that are subgingival. On removal of the matrix after setting, the surplus to be removed is trifling as compared with that which is present when the operation has been performed without the aid of a matrix.

ONTARIO DENTAL ASSOCIATION CONVENTION

THE Annual Convention of the Ontario Dental Association will be held at the Royal York Hotel, Toronto, on May 20, 21 and 22, 1935. A very fine programme of essays and clinics has been prepared. Ethical dentists of Provinces of Canada, outside of Ontario, and,

from the United States, are invited to attend as guests of the Ontario Society.

FRED J. CONBOY, *Secretary-Treasurer,*
Ontario Dental Association.

86 *Bloor Street West,*
Toronto, Ontario.

ONTARIO DENTAL NURSES AND ASSISTANTS ASSOCIATION

THE Executive Committee of the Ontario Dental Nurses and Assistants Association have held three meetings in the Good Companions Tea Rooms — Toronto, with the President, Miss Ellen Tuck, presiding.

The Fourth Annual Convention will be held May 20th, 21st and 22nd, 1935, at the Royal York Hotel, Toronto.

The following were named as the Convenors for the Convention:—Mrs. M. Edwards, Social Convenor; Miss G. Wiggins, Membership; Miss Helen Ansell as

Convenor of the Nominating Committee.

It is the aim of the O.D.N. & A.A. to help the local Chapters in any way possible.

The Annual Dues are \$2.00 and should be in not later than March 20th. Convention Registration fee this year is to be \$1.50 for members and \$2.00 for non-members.

Corresponding Secretary,

MISS DOROTHY COLLETT,
928 *Medical Arts Bldg., Toronto, Ont.*

"CYSTS AND NEOPLASMS OF THE JAWS". A CONSIDERATION OF THEIR AETIOLOGY, PATHOLOGY, CLINICAL COURSE, DIAGNOSIS AND TREATMENT

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(Concluded from the March Journal)

Cysts of the Maxilla, Adamantinomata and Other Tumours Simulating Cystic Odontomes.

CASE XIII. 0-26-1607. DENTAL ROOT CYST OF THE MAXILLA.

This man, eighteen years of age, gave a history of an injury of the upper left central incisor tooth, the result of a blow. This was followed by death of the pulp and infection. The tooth had been extracted for a year or more. For several months an enlargement of the palate had progressively increased in size. The X-ray showed an almost complete loss of the bony substance of the palate and of the floor of the nose.^{Fig 29} This, together with the clinical findings, established the diagnosis of a dental root cyst of the residual type. Palpation of the mass in the palate demonstrated fluid contents under moderate pressure. Lack of marked tenderness indicated a cyst rather than an abscess formation. Careful diagnosis is necessary to differentiate these conditions; for the surgical approach for drainage in abscess conditions is through the plate, whereas in cysts the palatal approach is contra-indicated.

Under novocaine anaesthesia the cyst was uncovered on the labial aspect. It

was found to have completely destroyed the alveolar process on the palatal side of the lateral incisor, the cuspid, and the first bicuspid teeth. These were removed with the cyst wall adherent to the root cementum. The outer fibrous portion of the cyst wall was found adherent to the periosteum of the palate and was separated with considerable difficulty. Neither the floor of the nose nor the maxillary sinus was opened, though their lining membranes were exposed. Gauze dressings of the cyst cavity were carried out for several weeks.

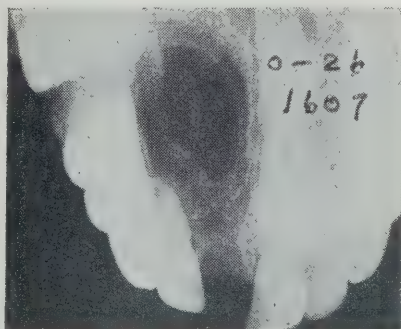


FIG. 29, CASE XIII.
Central bite plane dental film showing extensive destruction of the hard palate and floor of the nose by a dental root cyst.

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Case XIV. 0-26-904 (1922). RESIDUAL ROOT CYST OF THE MAXILLA. This man, 47 years, gave a history of having had extracted the upper right lateral incisor and the first bicuspid tooth about one year previously. At the same time a retained root was found and removed. The extraction sockets healed somewhat slowly. For the past several months there had been some local discomfort, and quite recently an enlargement on the upper jaw on this side had been discovered. X-ray examination (lateral bite-plane film) showed a large cystic area of destruction of bone in the maxilla.^{Fig 30}

Under novocaine anaesthesia the cyst wall was uncovered through a labial-buccal approach. The overlying bone was thin, and the cyst wall was seen to be very thin and transparent. The cyst was but slightly adherent to the bony cavity and was dissected free, and removed without rupturing. When placed intact in 5 per cent formalin solution for fixation, the cyst contents became coagulated.

Case XV. 0-25-270. DENTAL ROOT CYST OF THE MAXILLA. This man, aged thirty-two, gave a history of deep caries, pulp and root-end infection of



FIG. 30, CASE XIV.
Lateral bite-plane dental film showing destruction of maxilla by a large dental root cyst.

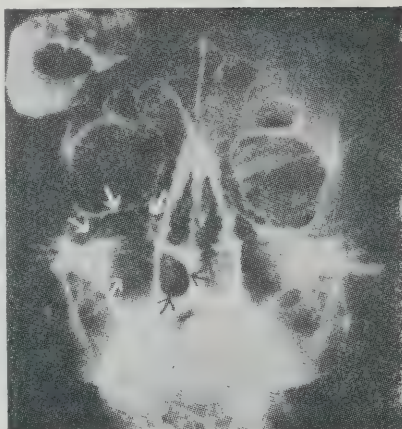


FIG. 32, CASE XV.
Postero-anterior sinus x-ray film showing almost complete obliteration of the maxillary sinus by a large dental root cyst. Also the destruction of the floor of the nose may be noted. (Inset, photograph of gross specimen).

the left lateral incisor tooth. Discomfort and enlargement of the anterior portion of the left upper jaw led to the extraction of the affected tooth. The tooth socket did not heal, and it was found that a probe could be passed an inch or more upward and backward into the region normally occupied by the maxillary sinus. There was discharge from the cavity. Sinus X-rays^{Fig 32}, showed a circumscribed, circular opacity not seen in ordinary sinus infections, and the dental films showed a great loss of alveolar process in the incisor and cuspid regions. The anterior portion of the floor of the nose on the left side was elevated considerably.

In 1925, under local anaesthesia the cyst was uncovered through a labial-buccal incision. It was found to fill practically the entire cavity of the antrum and to extend beneath the nasal floor to the median line. The cyst had a very thick wall. A thin layer of new bone, which was found above the cyst, was

broken through, revealing a small space beneath the orbit, all that was left of the maxillary sinus. The anterior portion of the cyst cavity was packed with gauze. This was changed every third day until there resulted considerable filling in and regeneration of the alveolar process.

Had the Partsch operation been used in this case, the final results would likely have been more satisfactory.

Case XVI. 0-30-D-142. DENTAL ROOT CYST MAXILLA. This patient came with a history of a sinus discharging in the second molar region of the upper jaw, left side, at the site of a tooth which had been extracted about two months before. A probe could be passed high up into the region of the antrum. Irrigation of the area did not pass into the nose.

The X-rays showed loss of bone, a devitalized first molar, with infection of the process. The second bicuspid also was devitalized, but apparently not involved in whatever process was present.

August 22, 1930, under novocaine a buccal incision was made to expose the buccal plate of the molar. Upon extraction, this tooth was found attached to a large cyst. The incision was carried back as for a Caldwell-Luc operation, and the entire cyst was removed, still attached to the tooth. It was found apparently to involve the entire antrum. An intranasal Caldwell-Luc window was made, an iodoform gauze cigarette drain inserted, and the oral incision closed.

On August 23, the next day, the drain was removed. There were no post-operative complications. Examination two and one-half months later showed excellent healing of the mouth incision and a normal appearing nose. There were

no nasal symptoms whatsoever, nor any jaw discomfort. In April, 1932, the patient reported by letter that he had remained well in every way with no signs of any complications since the operation. This method of operation is indicated in large cysts that are limited to the posterior part of the upper jaw, i.e., cysts in the bicuspid and molar region that encroach upon the maxillary sinus but do not extend forward beneath the floor of the nose. To use this method one must have some training in nasal surgery. The cyst wall is completely removed, and the antrum widely opened. The cyst cavity, which encroached upon the maxillary sinus, now becomes part of it. A window opening is made in the antro-nasal wall beneath the inferior turbinate bone. The oral incision is closed by suturing. This is in effect, the Caldwell-Luc operation for maxillary sinus infections. A few post-operative dressings through the nose greatly shorten the treatment, and there remains no oral deformity nor depression.

Case XVII, Path No. 033-D 30. This young lady, twenty-four years of age, had known that her upper left cuspid tooth had not erupted, but there were no symptoms denoting the development of a cyst in this region. This was discovered by an X-ray examination which was made to determine the position of the cuspid tooth. The dental films^{Fig 33} showed the destruction of the root ends of the upper bicuspid and molars, and the presence of a cuspid tooth crown high up. Bite-plane films^{Fig 34} showed extensive destruction of the maxilla on the left side. The cuspid tooth was shown in a posterior position with the lateral portion of its root destroyed.

Under novocaine anaesthesia a Partsch

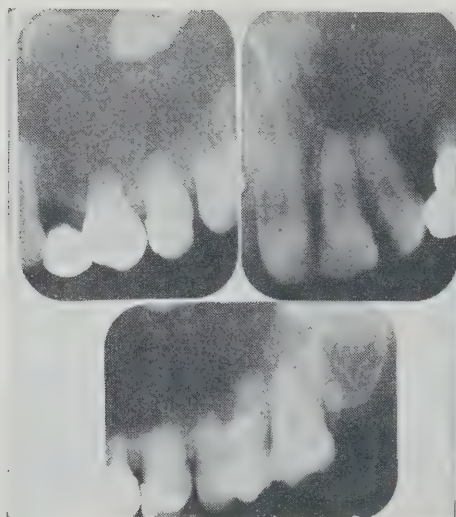


FIG. 33, CASE XVII.

Dental and bite plane films showing cystic destruction of maxilla associated with an unerupted tooth which shows resorption. Extreme resorption of the root ends of bicuspid and molar teeth is evident as well as calcification in the wall of the cyst.



FIG. 34, CASE XVII.

operation was performed through which the cuspid tooth was located and removed with some difficulty from the region of the nasal antral wall.

Imbedded in the cyst wall were numerous calcific bodies. The cyst extended forward beneath the floor of the nose, which seemed to preclude the handling of it on the basis of a Caldwell-Luc operation. Decision was therefore made to use the Partsch procedure^{Fig 35} in the hope that this anterior part of the cyst would fill in sufficiently to permit, at a later date, the making of an intra-nasal window for drainage and the surgical closure of the Partsch opening. This

was done on July 22. There has been a small recurrence of the Partsch opening in its central portion which may require another operation for its closure.

This two-stage combination of a Partsch and Caldwell-Luc procedure is unusual.

Case XVIII. 0-24-178. ADAMANTINOMA OF THE MANDIBLE. This patient, thirty-two years of age, sought treatment for discomfort and recurrent swelling in the mandibular left third molar region.

On April 5, 1924, under novocaine anaesthesia the suspected tumour was uncovered and removed from the bony



FIG. 35, CASE XVII

Post-operative condition showing Partsch operation. Previous to establishing antro-nasal drainage and closing opening into the mouth.

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cavity. It was very friable and was adherent to the bony wall.

The microscopic examination showed the tumour to be an adamantinoma.^{Fig 36-37} The patient was warned of possible recurrence; but there were no symptoms of such until January, 1927, when an X-ray showed very definite involvement higher up and farther backwards into the ramus.^{Fig 38} It was apparently circumscribed and hence completely removed. The surface was cauterized with phenol and zinc chloride solution. This was followed by post-operative radium treatments. Healing of the area was uneventful, and there have been no signs of recurrence in the ramus.

Case XIX. 0-25-205. ADAMANTINOMA OF THE MANDIBLE. This man, aged sixty, complained of an enlargement of his lower jaw in the left molar region, which had been noticed for three or four months and appeared to be growing slowly. Two years before, the bicuspid and the first molar teeth were extracted under nitrous oxide. The sockets healed somewhat slowly, but apparently satisfactorily. A year later soreness was noted in this region; and after X-ray examination, decision was made to open and curette the area. Packing was carried out for about a month. Since this time the socket had not entirely healed. Examination showed a well defined tumour-like mass extending towards the buccal and measuring 3 cm. by 2 cm.^{Fig 39} On the lingual side there was a slight prominence. The X-ray examination showed a destruction of the bone of the mandible to a level of about 4 or 5 mm. below the level of the root-ends of the teeth. The margins of the area were somewhat irregular and scalloped; and

here and there appeared some fine, bony trabeculations like those seen in giant-cell tumours.



FIG. 36, CASE XVIII.

The larger islands of adamantin epithelium resemble strikingly the form of tooth buds. The fibrous connective tissue stroma is great in amount.

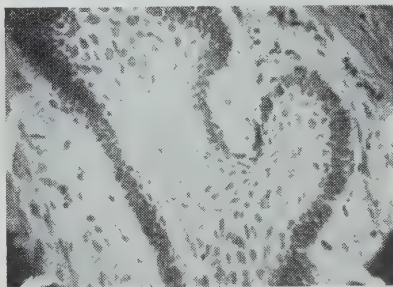


FIG. 37, CASE XVIII.

Shows one of the invaginated islands of typical adamantin epithelium resembling a normal tooth bud.

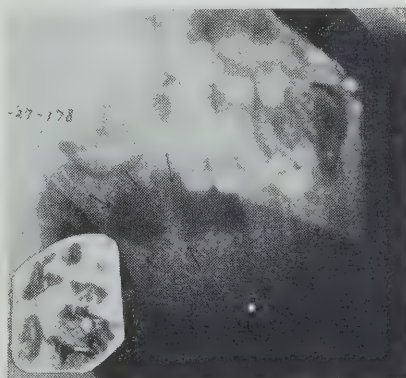


FIG. 38, CASE XVIII.

Lateral jaw film showing destruction of bone in the region of the ascending ramus. Note the irregular scalloped border of the tumour area.

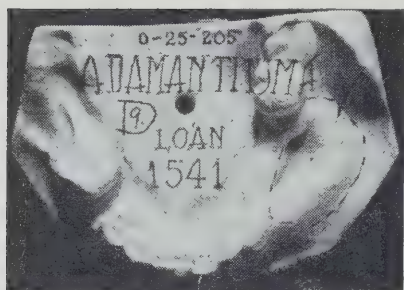


FIG. 39, CASE XIX.
Cast of adamantinoma of the mandible, showing pronounced buccal extension of the growth.

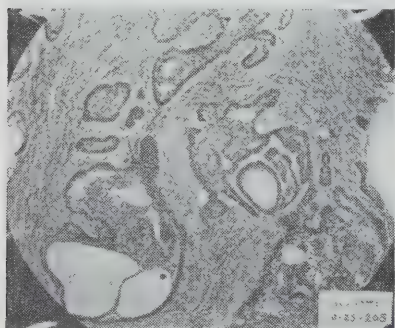


FIG. 41, CASE XIX.
Low Mag—Masses of adamantin epithelium are seen in a fibrous connective tissue stroma. Large and small cysts are seen in the islands of epithelium.

March 6, 1925, under novocaine anaesthesia, the tumour was uncovered and found to be very firm, though not calcified. The tumour was dissected free from the bony cavity; and the cavity was thoroughly cauterized with phenol and zinc-chloride solution and curetted. Dressings were carried out for about six weeks, at the end of which time the area was thoroughly healed.

Fig. 41 shows the characteristic photomicrograph appearance of the adamantinoma. This patient was seen at intervals for seven years, and there was no evidence of recurrence. There has been no regeneration of the alveolar process on account of the fact that both the

lingual and buccal plates had been destroyed by the tumour.

Case XX. 0-27-1184. *ADAMANTINOMA MANDIBLE.* This patient, a physician, aged 38, gave a history of having, for over a period of sixteen years, recurrent inflammation in the left third molar region of the mandible. The first abscess, incised in 1909, was thought to be a quinsy. Some two or three years later the patient noted a swelling in the third molar region, and X-ray examination showed an unerupted third molar. An unsuccessful attempt was made to extract it under novocaine, but a few days later the tooth was removed under ether anaesthesia. For the past eight years or more this region had several times become acutely swollen. On each occasion incision was necessary to afford drainage.

The patient came for examination a week or two after one of these acute swellings, and there was present a sinus leading downward and backward into the mandible in the third molar region. There was but little swelling, and the X-ray examination showed a bean-shaped central area of loss of bone suggestive of a residual dental root cyst or an indeterminate type cyst. About three weeks later under novocaine block anaesthesia, this area was uncovered. The overlying scar tissue including the sinus was removed and the cyst wall was dissected from its bony cavity. In so doing it was opened into, and a moderate amount of purulent exudate was evacuated. The bony margins of the cyst cavity were trimmed back, but the deeper portions were not curetted on account of the recent severe acute inflammation.

The history of the condition and the

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operative findings all pointed to an inflammatory lesion, but the mistake was made of not having a routine microscopic examination made of the removed tissue. It, however, was not thrown away, but was preserved in formalin; and eighteen months later the sections proved to be adamantinoma. Had this been known at the time of operation, the bone would have been thoroughly cauterized and curetted. There were no further attacks of inflammation nor signs of recurrence.

DIFFERENTIAL DIAGNOSIS. It will be of interest to discuss a few case reports of the various neoplasms of the mandible and the maxilla that simulate the cystic odontomes.

Case XXI. 0-28-823. **OSTEITIS FIBROSA CYSTICA.** This lady, 50 years of age, gave a history of recurring indefinite pains in the mandible for five or six years. The dental and lateral jaw X-ray films showed multiple areas with small rounded masses of condensing osteitis.^{Fig 45} The teeth were vital. The area in the left molar region was opened up under novocaine anaesthesia and the fibrous and bony tissue was removed.^{Fig 46-47} One dry, empty cyst was opened. The cavity in the bone was treated by gauze dressings for several months and in time filled to the surface. X-rays three years later showed considerable, but not quite complete, regeneration of the bone. The lesions beneath the incisor seemed less cystic and the area in the right molar region seemed smaller but more circumscribed.

Symptoms, while still present, are less frequent and not so severe.

Cases of osteitis fibrosa should be referred to the physician for studies of the

calcium and phosphorus metabolism and investigation regarding the presence or absence of parathyroid tumour or disease.¹²

Case XXII. 0-32-D-32. **OSTEITIS FIBROSA CYSTICA.** This patient, 35 years of age, had discomfort for about

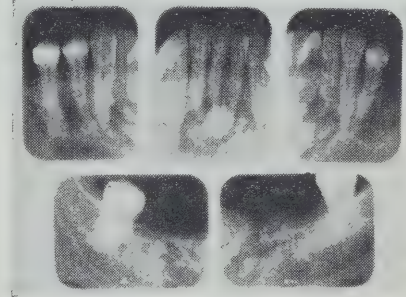


FIG. 45, CASE XXI.
Osteitis fibrosa cystica of the mandible.



FIG. 46, CASE XXI.
Low Mag.—Osteitis fibrosa cystica.

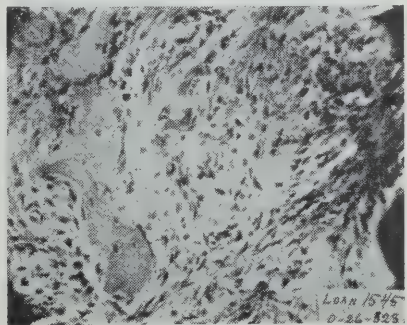


FIG. 47, CASE XXI.
High Mag.—Osteitis fibrosa cystica.

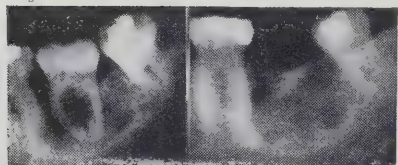


FIG. 48, CASE XXII.

Osteitis fibrosa cystica involving the central portion of the roots of the molar. Two and one-half years later, extension of the condition after the extraction of the tooth.

three years following the removal of a molar tooth. There was some tenderness and a slight enlargement externally in the lower right molar region, and the X-rays of October, 1929, showed a very unusual picture of destruction of the central portion of the roots of the second molar.^{Fig 48} The tooth was extracted, but no tissue was saved for microscopic examination.

In 1932, the enlargement increased slightly, and examination showed the ridge to be firm and the enlargement external to the ridge quite apparent. A small area of this enlargement was soft. X-rays showed destruction of bone ex-

tending from the ridge to the inferior dental canal.^{Fig 48} The outline of the decalcified area was slightly scalloped.

Under novocaine anaesthesia, March 5, 1932, the tissues on the buccal of the ridge were incised and reflected to uncover a bony prominence. The anterior upper portion seemed to be of egg-shell thickness. With the use of a chisel, a large section was removed with underlying tumour substance, which appeared to be osteitis fibrosa cystica. The remaining softened bone was removed to produce a large cavity. The roots of the third molar were not exposed, but the roots of the first molar were close to the tumour area if not exposed. The wound was closed by sutures. The healing was uncomplicated. On microscopic examination the tissue was found to be a very typical osteitis fibrosa cystica.

Case XXIII. NASO PALATINE CYST. The patient complained of some discomfort and swelling in the anterior part of this hard palate just behind the incisor teeth, but had not been conscious of any trouble for more than three weeks.

The examination showed an elevation of the muco periostium of the palate; circular in outline, just behind the gingiva of the incisors. There is a slight prominence which is not well defined high up on the nose on the labial aspect. X-ray^{Fig 51} showed a large circular cystic area, not definitely related to the root-ends, giving the appearance of a nasal palatine cyst rather than of a dental cyst. The teeth have no cavities, have not been subject to traumatism, and are vital according to Dr. Salisbury's tests. The patient did not return for operation.

These cysts of the upper jaw of nasal origin have been very well discussed and



FIG. 51, CASE XXIII.

Nasopalatine cyst of the maxilla.

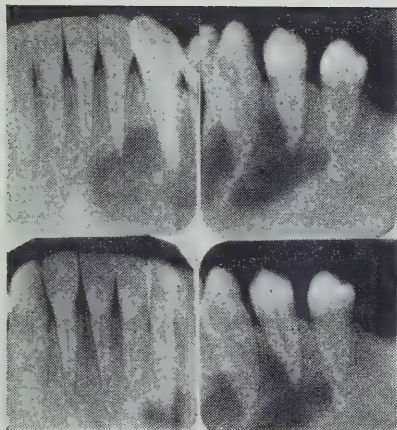
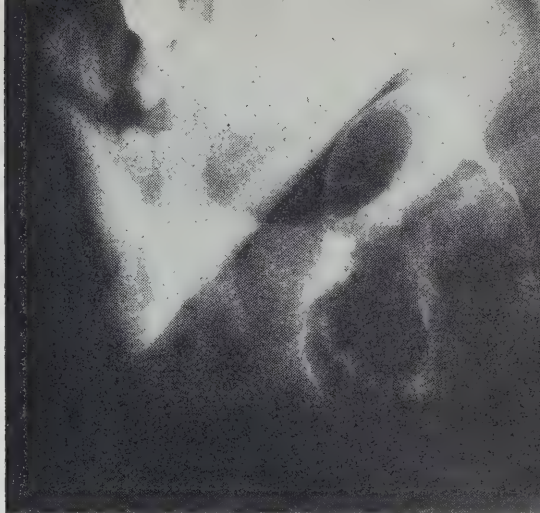


FIG. 52
Giant cell tumour of the mandible simulating a cyst.

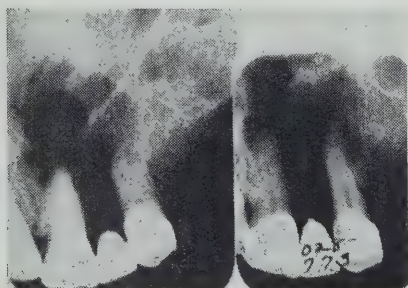


FIG. 53
Sarcoma of the maxilla simulating a cyst.

rare. This, however, must be kept in mind in the consideration of the diagnosis of median cysts of the maxilla in the presence of vital teeth, and in the atypically situated cysts of the mandible.

Other central tumours of the jaws may simulate cysts in so far as the X-ray findings, the clinical examination, and history are concerned.^{Fig 52-53} These are solitary bone cysts, central fibromas, angiomas, giant cell tumours and myelomas. Metastatic tumours, benign and malignant, in the jaws are rare, but may present in the X-ray film a circumscribed area of bone destruction not unlike that resulting from the cystic odontomes. One must therefore be on the lookout for these uncommon tumours and be prepared to secure a biopsy and diagnosis in the event that at operation an unusual tumour is found. Provision should be made to secure appropriate treatment in the event that the condition necessitates major surgical treatment or X-ray or Radium therapy.

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described by several authors, including Meyer¹³, Rudolph Kronfeld¹⁴, Theodor Blum¹⁶, Joseph Schroff¹⁸, and Samuel Michlin¹⁵. These, as well as the solitary bone cysts described by Blum¹⁷, are quite

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730 La Salle Building.

OFFICIAL CALL TO THE WESTERN CANADA DENTAL SOCIETY

THE next convention of the Western Canada Dental Society will be held in Calgary June 3, 4, 5, 1935, when the Calgary Dental Society have kindly consented to act as hosts at our Convention.

I have just returned from an evening spent with the Calgary Dental Society and I want to tell you these men are making every preparation to stage a real convention in June.

They have appointed all their committees and outlined in detail the work of each committee. They have already secured the consent of one of the ablest speakers and clinicians on this continent to appear at our Convention, and are negotiating for other speakers. A well-

balanced programme of the foremost thought in Dentistry today together with lively entertainments is assured.

It is four years since our Western Canada Dental Society has met in Convention, and eight years since we have met in Alberta. This is your opportunity to renew your friendships with your confrères from these western provinces, and to hear the ablest speakers and clinicians available.

This is your Western Canada Dental Society—we need you in Calgary. You need what we have to offer you. COME.

LESLIE ALLEN, *President,*
Western Canada Dental Society.

"The important thing in life is to have a great aim and to possess the aptitude and perseverance to attain it."—Goethe.

WHEREIN the National Policies of our forefathers are again emphasized.

THE DANGERS OF SECTIONALISM IN CANADA

By W. C. KEIRSTEAD, M.A., Ph.D., D.C.L., Professor of Philosophy and Education,
the University of New Brunswick.

WE in Canada are peculiarly liable to sectionalism and to its evils. Our Confederation was one of sparsely populated provinces, separated from each other by vast stretches of wilderness lands, often unbroken by highway or railway or other means of communication. Those provinces had little trade or communion with each other. Each was isolated and provincial in its life, the one tie that united them being their loyalty to the British Crown.

The two main provinces were of different race, and brought into the union the racial differences and attitudes they had experienced prior to the federation. In fact, Confederation was, as Goldwin Smith has said, the child of this racial or political deadlock.

Canada is composed of very different economic provinces. The eastern provinces face the Atlantic and have their markets over the seas and to the south. The St. Lawrence River area, with its cheap transportation, its varied and rich resources of raw materials, its enormous water-powers and its comparative density of population, is a manufacturing country. The vast prairies produce wheat for a world market, and need cheap transportation and low costs of production; whereas our western province faces

the Pacific and has economic resources and interests peculiar to itself.

The fact that these provinces had an organized political existence prior to their union, tends to perpetuate the spirit of sectionalism. Moreover, the peculiar relation of our governments to each other, with overlapping of federal and provincial functions, and with only general and vague constitutional delimitations, promotes contention and provincialism. The present prolonged depression, with its increased expenditures and decreased provincial revenues, has accentuated provincialism, until, as Professor Leacock has recently told us, we seem to have lost the aspirations and great hopes of our Fathers. He declares that now we are all *province* men. He does admit that the Prime Minister and himself are yet Canadians, but, he asks, are there others? I venture to enroll myself with these distinguished gentlemen only because I feel, that in addition to these two Elijahs, there are many thousands of our Canadian citizens who have not bowed the knee to Baal or worshipped at his altar of sectionalism.

RACIALISM

For a time racialism made national unity almost impossible. It distorted

issues in parliament and before the electors; it made heroes of the fanatic and the demagogue; it appealed to emotional complexes and prejudices, and stifled the voice of reason; and it diverted our energies from true issues to false ones. Yet, in spite of racialism, we are learning co-operation and fellowship, and are appreciating the language, literature, arts, and culture of both races. We are coming to see the value of tolerance, sympathy, understanding and goodwill in religion, and to agree with Sir Wilfrid Laurier, that "faith is better than doubt and love is better than hate". Are we not finding unity in a higher synthesis and one that comprehends our differences of race and creed?

NATIONAL POLICIES

Our Federal Government has embarked upon great policies of development, transportation, immigration, and protection, to overcome economic sectionalism, to increase interprovincial trade, to develop national resources, and to promote economic and political unity. A Commission of the Province of Nova Scotia has unanimously reported that these national policies, have on the whole, been detrimental rather than helpful to that province. It declares also that by reason of the protective policy, high costs of transportation are included in price and shifted from the manufacturing to the outlying areas. It would be valuable to have a similar report from every other province. Perhaps even the central provinces, who get most of the protection, might claim that they have paid quite highly for free markets, which, after all, comprise less than one-half the population of Canada. Perhaps there has been net economic loss in subordinating eco-

nomic interest to political ideals. A national ideal is largely an emotional valuation. Since the Great War, Europe has been redivided into numerous small nations to satisfy racial and national sentiments, with the result of restricted trade and heavy economic loss to all concerned.

Trade on this continent moves naturally north and south more than it does east and west. But our neighbours have also their policy of economic nationalism, and we decided at Confederation that we would maintain political independence.

That our protective policy has given regional advantages and disadvantages must, I think, be admitted. Further, some provinces are fortunate in having more of these prosperous areas than others; and consequently greater prosperity and more buoyant provincial revenues. Is our national policy to seek the development of the resources and areas which will give the largest return in present and future prosperity, without regard to provincial situation, or is it to seek for an equality of prosperity and development in each province, without regard for the opportunities a province offers to increase the well-being and numbers of our population?

PROVINCIALISM

Provincialism becomes the champion of economic sectionalism. Each province clamours for federal support and each fails to appreciate the needs as well as the opportunities for national progress and well-being offered by sister provinces. The Counsel for the Province of Nova Scotia, in his exceptionally able brief before the Royal Commission stated that:

The Dangers of Sectionalism in Canada

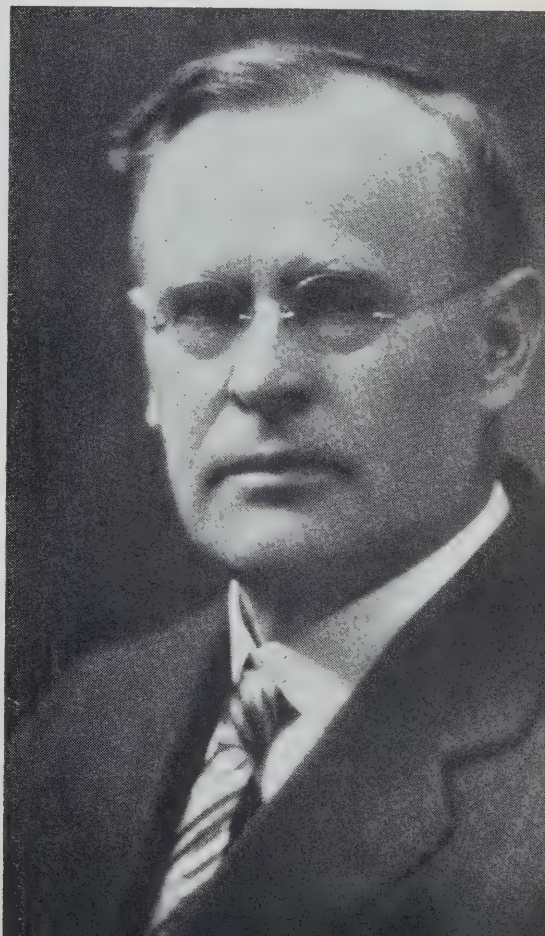
"... a federation is a different form from that of a unitary state. Had the provinces of British North America been welded into a legislative union, the Dominion today would constitute one political entity and the inhabitants of this section of the Dominion would have less valid grounds for complaint."

That Nova Scotia has not shared fully in the advantages of the protective policy; that its primary industries have suffered severely from it; and that partly as a direct result from this policy the provincial government finds itself deprived of sufficient revenues to carry out the functions imposed upon it by the Act of Confederation, was the conclusion not merely of Counsel but of the Royal Commission. It is worth something to have this contention formulated as the judgment of the distinguished economists of the Commission. Moreover, the Commission agreed that federal subsidies should be distributed on a basis which should take into account the effect of the national policy, and that the federal government should take over from the provinces those functions or services which provide common standards of decent living for Canadian citizens.

Such a transfer of functions would mean an amendment of the B. N. A. Act, an amendment greatly needed but exceedingly difficult to effect, and rendered even more difficult by rigid provincialism. However, we could accom-

plish it and yet preserve inviolate, the rights guaranteed by the Fathers, if we approached our problem in the same generous spirit in which they wrought out our original constitution.

But, admitting these facts, does it follow that federal policy should make its primary consideration an equality of development and prosperity in each of the provinces? The adoption of such a principle would defeat any far-sighted national policy and would increase our already over-stimulated provincialism. Provincialism has already captured the press in some provinces and become the stock-in-trade of many provincial politicians. Yet such a policy is suicidal to national unity and development. It



WILFRED C. KEIRSTEAD.

would rob our federal parliament of its comprehensive and national character and turn it into a number of regional groups, and it would become very extravagant by reason of the log-rolling and bargaining of these groups for their sectional interests. Our legislators would cease to have any understanding or appreciation of national ends, or to feel any deep sense of their responsibility to legislate for all of Canada; each group would be primarily concerned with its sectional interests and satisfied when they were attained. From such a parliament it would be impossible to evolve a comprehensive and far-seeing policy for the nation's good. Sectionalism would be equally bad for the provinces. It would be a cloak to cover inefficiency and extravagance. It would put a premium upon stagnation and tradition and routine in administration, and would be a cul-de-sac to prevent any careful investigation and reasoned solution of provincial problems.

VISION OF OUR FOREFATHERS

The Fathers of Confederation felt that they were establishing a Canadian Parliament and were creating out of these provinces a new nationality. They were uniting the people, and not merely provincial governments. For the great purposes assigned to the federal government they meant it to function as if we were a legislative union. If our federal policy does not promote the general ends of our people, if it is not a policy for the common good, our Constitution provides an appeal, not to the separate provincial governments but to the Sovereign Power itself—the intelligence and judgment of all the citizens of Canada. If the federal policy is one for purely

private and sectional interests, then let the nation pronounce judgment and assert its will. Our citizenship affords not merely full freedom of movement within the nation, but the right of appeal to the Sovereign Power for protection and justice. Our security and well-being are not to be attained through sectional or provincial alliances but through the action of the intelligence and conscience of Canadian citizens.

Our great danger is in our ignorance of actual situations, in emotional complexes and prejudices that blind us, and in self-seeking which narrows the vision and directs our energies. As Edward Blake said long ago, "Until Canada develops a national way of thinking we cannot get the spirit necessary for the welfare of the nation." Our problem in Canada today is to create in our citizens the national way of thinking. We must produce citizens throughout this wide Dominion with a clear understanding of, and a vital interest in, the aspirations and needs of their fellow-citizens of every province and section, and in the resources and possibilities of every portion of Canada.

Early civilizations centre in small groups, but as they grow the groups enlarge and coalesce. Indeed, it is only as we pass from the "here" to the "there", from the "now" to the "then", only as we look before and after, only as we discern ourselves as a focus of universal relations, that we lift our lives out of illusion into reality. It is only as we grasp the essential facts and laws of existence and use them in clear, impartial thinking for comprehensive ends, that we ourselves achieve some degree of nobility and goodness and leave a worthy heritage to our children.

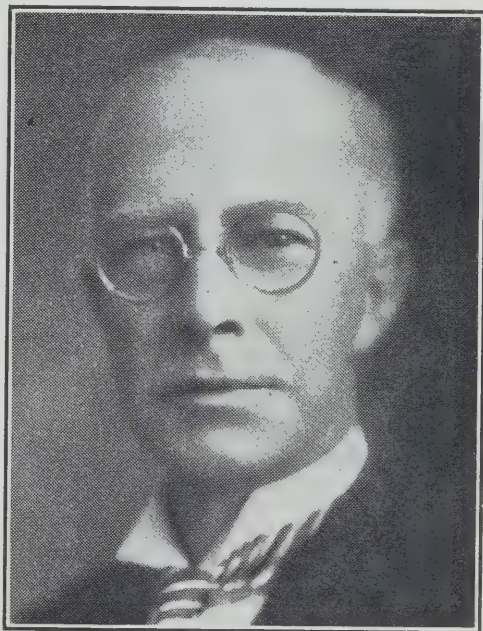
A WORD OF WELCOME TO THE JOURNAL OF THE CANADIAN DENTAL ASSOCIATION FROM THE ONTARIO DENTAL ASSOCIATION

THE aims and ambitions of the Officers and many of the members of the Canadian Dental Association have finally been realized. The National Dental body has now a medium of its own, in which to express its policies, to tell the dentists of the Dominion what the C.D.A. has already done for the profession and also how great the possibilities are for an all Canadian organization with but the one thought, the welfare of all.

There is also a sentimental interest for me, in the publication of the first issue of the C.D.A. *Journal*. Dr. Faulkner in an article of that issue, states that the first Dental Journal in Canada was published in Brockville in 1854. As a member of the House of Delegates of the C.D.A. and a dentist of Brockville, it is a great pleasure to me to have played a very small part in helping to establish our National *Journal*.

It is a long step from 1854 to 1935. Thanks to the pioneers in dentistry, who had the vision to build well and wisely, our profession has risen steadily, until it is recognized as being an all important factor in the maintenance of health. There is and always will be much still to be accomplished and fortunately we have many men, of ability, who are willing to give of their best, that the work may be carried on.

While the *Journal* will be of great educational value, to me, its greatest sphere of usefulness at the present time, is that of drawing the Provinces closer together. We are separated by such great distances, and we meet so seldom to interchange ideas and get the other person's viewpoint on problems, which may be peculiar to our own



W. H. WOODROW

province. This was well exemplified at the 1934 meeting of the House of Delegates. Nearly every province had a grievance of some sort, but after free discussion, in the spirit of good will, give and take, our difficulties were overcome.

The *Journal* is owned and controlled by the profession from coast to coast and its pages should be open to any member for constructive articles.

In Ontario, our own publication, The Journal of The Ontario Dental Association, keeps us posted as to the activities of our own organization, publication of papers given at our annual meeting, and matters of interest to the 1,800 dentists in our province. All revenue from this source is devoted to Public Dental Health work. There is ample scope for both journals in their respective fields.

There is so much to be done in education, research, public dental health, provincial, inter-provincial and Dominion activities, that the two Journals can not adequately cover the ground.

We are on the threshold of a new era for our profession, the way may be long, and the climb beset with difficulties, but what worthwhile achievement has been brought to a successful issue without surmounting difficulties.

With Dr. Harry Garvin as editor, you may be sure no stones will be left unturned to make The Canadian Dental *Journal* the factor it should be in our Canadian dental life.

The Convention of the Ontario Dental Association is to be held on May 20, 21, 22, at the Royal York Hotel, Toronto. This is the time of the year when we feel we would like a change from the usual office routine. All dentists, outside of Ontario, members of C.D.A. are eligible as guests and will receive a hearty welcome.

We can promise you interesting and instructive papers and clinics, an exhibit hall filled with the most modern dental equipment and scientific exhibits, and up-to-the-minute entertainment.

Why not make your arrangements now to spend those three days with us?

W. H. WOODROW, *President,*
Ontario Dental Association.

HISTORICAL SKETCH OF WESTERN CANADA DENTAL SOCIETY

By H. J. MERKELEY, M.D.S., Winnipeg, Manitoba.

THE W.C.D.S. had its birth at the annual meeting of the Manitoba Dental Association in January, 1900. At this meeting a committee of five was elected to arrange for a convention of Western Canada Dentists. This was held in Fellowship Hall, McIntyre Block, Winnipeg, in July, 1900. The original

committee consisted of Dr. Dalgleish, chairman; Dr. S. W. McInnis, secretary; and Drs. Mathison, White, G. J. Clint, and Emmons as advisory members.

We must commend the foresight and ability of our early predecessors, as we find that at this early date Dr. S. W. McInnis read a paper entitled "Nationali-

zation of Professional Standards in Dentistry"; which, within a very few years, resulted in the formation of the Dominion Dental Council. The code of ethics adopted at this early date is also of great interest, forming as it does the basis of most of the present codes, and being practically the same as that now used by the D.D.C.

Another matter considered at an early meeting was the necessity for a Dental Corps in the Army, the Boer War having shown the dire need of an auxiliary.

Dental education in the schools was also discussed and a committee appointed to work out some plan. Then too, the lack of proper standards for entrance to dental schools was realized and steps were taken to raise them to the level of those demanded by medicine.

There were twenty-eight charter members, of whom only eight survive: Doctors W. F. Taylor, R. A. Harvie, G. F. Bush, C. P. Banning, and B. F. Curry, of Winnipeg; Dr. C. A. Powers, Brandon; Dr. Schnarr, Rat Portage; and Dr. A. L. McLachlin, Carman. Doctors Greenfield, Arthur Clint, and Charles Walsh were registered and admitted as students.

The early clinics are interesting as showing what was engaging the attention in operative work in these earlier days. Dr. Bush gave a clinic on the use of cocaine for the removal of dental pulp. I think it was at this time when Dr. Bowles so kindly volunteered to have the pulp removed from one of his perfectly good centrals, so that all could profit by the clinic. Surely this was a wonderful example of self-sacrifice; and we trust that he, in the light of more recent knowledge, doesn't mind too much having been the guinea pig. Indeed our

early members did much for us—more, probably, than we properly appreciate.

The conventions were held regularly until the death of Dr. S. W. McInnis, when they ceased for six years.

In 1908, with Dr. W. F. Taylor as president and Dr. M. H. Garvin as secretary-treasurer, a new lease on life was taken, and the whole West was brought in. The War disorganized us after the Regina Convention of June, 1916, and we find that, instead of having conventions, clinicians were brought in and classes organized, each member paying a fee of \$50.00. Doctors A. E. Smith, Rupert Hall, and Neal were with us on this basis. Dr. Greenfield was the president and Dr. Merkeley the secretary at this time.

In 1925, steps were taken to organize Western Canada, with Dr. M. H. Garvin as president and Dr. Bowles as secretary; and since then we have continued to function, except as the depression has temporarily interfered.

Space will not permit a tracing of the advances made year by year, as recorded in the clinics given; so I will content myself with a record of one meeting only, that of March, 1909. Here we find "Orthodontia" by Dr. Bowles, "Inlays" and "Inlay Machines" demonstrated, "Somnoform", "Ethyl Chloride" and "Ashers' Artificial Enamel" also being discussed. Dr. Garvin had started his pyorrhea career, and Acolite for cast bases seems to have been used extensively. Denture work did not receive much attention.

A more exhaustive history is now in preparation, wherein it is hoped that greater homage may be paid to those who laboured so hard, and built so well the foundation in the earlier days.

F E E S

FEES.—Here, again, volumes have been written on this score, and we do not seem to be much nearer a solution, every man being more or less the assessor of his fees. Provided his following keeps coming back as satisfied patients, the presumption is that his fees are satisfactory to the patient.

Here is some advice I should offer to the young practitioner just about to locate in, say, a suburban or country practice. Have the courage to find out whom you consider the leading dental man or men in your particular district; visit them, and tell them quite frankly that you purpose starting practice in their neighbourhood, but that you have no intention of cutting prices, and would they be courteous enough to give you their scale of fees. Having received this information, be professionally-minded enough to hold to these fees; never lower them, but raise them if you think fit.

In these days of economic stress, as we all can testify, the matter of fees is a most acute one for both patient and dentist.

As a young man entering upon professional life or an older man struggling along, it behooves us to strain every nerve to maintain our fees as high as we can consistently with the economic conditions prevailing, for once we lower our fees to a non-productive level, the harder we will find it to restore them to a proper level when things really do right themselves.

While on the subject of fees, the time element as against a straight out fee comes up for consideration. Frankly, I do not think the time scheme worth serious consideration with a young man starting out, as it gives him a wrong conception of his obligations to his patients.

When you find the public clamouring for your services and you cannot conscientiously do them all justice, then I would advise you to institute the time basis in conducting your practice.

COLLECTION OF FEES.—You will have, at times, great difficulty in the collection of your just dues, and in this phase of your professional life you will find that there is no royal road to success. I do not care who the man is or on what basis he conducts his practice, he must, as a consequence, make bad debts; therefore, be prepared to face your loss, year by year, with equanimity. There are some good points to be gleaned from the summary, given by the statistician on the Economic Section in Dental Practice, at the recent Dental Congress held at Adelaide, bearing on bad debts. The summary there given is between 3% to 4% in the average practice. These figures I can substantiate, having verified same with my own practice during the past three years.

Excerpt from paper read before the Australian Dental Association, Queensland Branch, by A. R. Walker, D.D.S., L.D.S., and published in The Dental Journal of Australia, September, 1934.



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PROVINCIALISM vs. NATIONALISM

In this issue of the Journal appears a very comprehensive and timely survey on "Sectionalism in Canada", by Dr. Keirstead of the University of New Brunswick. He points out that our problem in Canada is to create in our citizens the *National way of thinking*, and that we must produce citizens throughout this wide Dominion with a clear understanding of, and a vital interest in, the aspirations and needs of their fellow-citizens of every province and every section. Edward Blake is quoted as follows: "Until Canada develops a national way of thinking, we cannot get the spirit necessary for the welfare of the nation."

"Canada First!" was the ringing cry of our first great Prime Minister, Sir John A. Macdonald—not Nova Scotia first, not Quebec first, not Manitoba first, but "Canada First!"

The need for a revival of this national policy throughout Canada in every walk of life is most apparent, and dentistry is no exception. In the profession of dentistry the thinking has been predominantly provincial in the past and is largely so still. We must train men to think nationally. We need them, and we need them badly.

The nineteenth century stressed individualism—politically, economically and socially—but the Victorian era is past.

The twentieth century stands for organized co-operation.

The Italian State compels such co-operation, as do the German State, and

others. We, as dentists of Canada, have had no plan worth calling a plan until very recently. We have momentous problems confronting us, and if we lay them down unanswered, dentistry in Canada will have a setback that will take years to overcome.

Provincially we are accomplishing a great deal. We give our dollars to our provincial organizations, but many of our most influential leaders tell us that the time is not opportune to raise the fees to provide adequately for a comprehensive national organization—that such a step would be unpopular. We do not agree with those who favour a narrow provincialism. It is not a question of putting our own house in order and leaving in abeyance any thought of the rest of Canada. The first man who is quoted as saying, some six or seven thousand years ago, "Am I my brother's keeper?" ended disastrously, and so we believe that the individual or the group who will presume to say it today will live to regret it. Have we not the proof staring us in the face among nations of the world today?

A few years ago Alberta was facing a problem in regard to some unqualified men who were threatening to take their case to the Supreme Court of Canada, an action which would have affected every province in Canada. In this case the Manitoba Association offered Alberta financial assistance if she required the same. More recently New Brunswick faced a somewhat similar problem. How splendid it would be if our national body were so well organized and so strong financially that it could come to the rescue in such cases as these!

One is reminded of the man who, seeing a half-frozen boy in the street last winter and finding he was hungry, invited him into his home and had him sit down to a fine dinner. The boy would not eat, but sat there quiet and sad. On being questioned, the boy said, "My little brother is outside, around the corner." When the brother was brought in, you should have seen them eat! And so our dental problems, as well as our economic and other national problems, will be largely solved when we refuse to eat until our brother has been brought in also.

There are some dreams that will never come true. If we expect to have a strong, effective Canadian Dental Association and still place the whole emphasis on provincialism, we shall awaken some day to find it a horrid dream—"As when a hungry man dreameth and behold he eateth, but he awaketh and his soul is empty: or as when a thirsty man dreameth and behold he drinketh, but he awaketh and behold he is faint."

Let us adopt the policy of nationalism as against provincialism, and at once strive to make the C.D.A. the outstanding dental organization of Canada. Let us vie with one another in accomplishing this task.

There is a proverb which reads "Where there is no Vision the people perish." It does not mean that if you have no vision or if I have no vision, we shall perish. It does mean, however, that if we have no vision, someone else will perish.

We should have a clear-cut, definite national dental policy which anybody can understand and which everybody should understand and support.

*"God give us men. A time like this demands
Strong minds, great hearts, true faith and ready hands;
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honour—men who will not lie;
Men who can stand before a demagogue
And scorn his treacherous flatteries without winking;
Tall men, sun-crowned, who live above the fog
In public duty, and in private thinking."*

STATE DENTISTRY AND LEGISLATION

As we go to press, we are advised by Dr. Fred J. Conboy, chairman of the committee on Legislation of the Canadian Dental Association, that a committee representing our Association recently went to Ottawa and interviewed cabinet ministers and heads of Departments with respect to matters of interest to the dentists of Canada.

Dr. Conboy reports that the committee on Legislation, of which he is chairman, and the committee on State Dentistry, of which Dr. J. S. Lapp is chairman, have matters well in hand and that the profession of Canada can be assured that their interests have been and are now being adequately safeguarded. A report of the work of these two important committees will appear in the May issue of the Journal.

We urge the dentists of Canada, and particularly the members of these two very important committees, in the various provinces, to give Doctors Conboy and Lapp their most enthusiastic support in their splendid efforts in the interests of the dental profession of Canada.

A CORRECTION

The Journal offers its sincere apology to Doctor Joseph T. Houle of Shawinigan Falls, for including his name in the obituary column of the March issue, a mistake having been made in translation from the French daily press. Doctor Houle is an active and esteemed member of the profession in Quebec and rendering unusual service in the community which he serves. We trust that he may be spared for many years to practise his profession and assist in the building up of a strong national dental organization.

BOOK REVIEW

STUDIES IN THE AETIOLOGY OF DENTAL CARIES. By G. Graham Macphee, M.A., M.D., Ch.B., L.D.S., Honorary consulting surgeon, Liverpool Stanley Hospital; Honorary assistant surgeon, Liverpool Dental Hospital; Honorary dental surgeon in charge, pathological laboratory, School of Dental Surgery, University of Liverpool. Cloth. 203 pages. Price, 7s/6d. Published February 13th, 1935, by John Bale, Sons & Danielsson, Ltd., Oxford House, 83-91 Gr. Tichfield Street, London, W.I.

The author has undertaken a survey of the subject of Dental Caries, including part of his Thesis for the degree of Doctor of Medicine. There are 337 references to literature on this subject and these references are dealt with clearly and concisely. All of the popular theories, such as bacterial, dietary, etc., are discussed, and the author believes that all will find their proper place in due course. The vital theory has been emphasized, but not unduly. The author's personal observations of three groups of children living under quite different conditions are very enlightening, and he agrees with Sim Wallace that caries is a "luxury disease" and "the better the school the worse the teeth."

The author considers that the translucent zone in enamel is almost certain evidence of a vital reaction and is regarded as the first line of defence. The translucent zone in the dentine is considered the second line, and secondary dentine as the third line of defence. The chemico-parasitic theory is not excluded; but none of the bacteria so far isolated

are considered causal factors, but rather that an ultra-microscopic virus is the causal factor if the disease is due to some *contagium vivum*. The author points out that the carious process might be due to a mixed infection, but that the immunological reactions carried out by himself and described in the text would suggest that it is probably due to a *contagium vivum*. Predisposing causes may be heredity, malnutrition, deficiency of vitamins, minerals, etc. Exciting causes may be carbohydrate stagnation with acid fermentation due to over-eating or eating soft, sticky foods, altered internal secretions due to illness, etc.; but the available evidence indicates that the ultimate cause is some *contagium vivum*. If further investigations confirm the truth of this hypothesis, the author believes that some day dental caries may be controllable by prophylactic measures, such as vaccines.

The author points out that, while no finality can be expected in a subject which has not been completely investigated, he hopes that this book will prove useful to those who are interested in the problem and may serve as a summary of past work and an indication of future lines of research.

One misses, however, any reference to the outstanding published works of Weston A. Price since 1932; but, whether one believes or not in the conclusions arrived at, this book is a most valuable and concise reference edition on the subject of Dental Caries, and should find its way into the hands of the dental practitioner.

The author and publisher are to be congratulated upon making available this distinct contribution to dental literature.

NEWS FROM THE PROVINCES

SASKATCHEWAN

A resolution was passed at the annual school meeting at Unity, authorizing the board to make arrangements with the local dentist to perform whatever dental work was necessary for the children attending school, the expense to be added to the school tax.

A state medicine plan, coupled with a campaign against illness, is being considered by the Saskatchewan Government. The scheme would be financed by compulsory insurance, plus taxation. It is stated that services under a state plan must be maintained and the patient must have the right to select his own doctor.

Dr. G. L. Cameron, of Swift Current, the president of the Canadian Dental Association, has long been interested in education in his home city, serving as member of the School Board for many years, and was recently re-elected for a further term of three years. At the Saskatchewan School Trustees' Convention held in Moose Jaw in February, he was elected vice-president of the urban section of that important body.

The Regina Dental Society is functioning very efficiently. As an innovation from the regular dental meetings, a very successful "Ladies' Night" was arranged in February. This society has a bowling club also, which receives enthusiastic support.

MANITOBA

The Winnipeg Dental Society seems to have received a new lease of life and is having a very successful year under the able guidance of Dr. Pat Gallagher, president; Dr. P. Hutzulak, vice-president, and Dr. Wm. F. MacKenzie, secretary.

The membership of the Society has passed the century mark and keen interest is being displayed in the regular monthly meetings which are well attended.

At the February meeting an interesting and informative address on the subject, "The Dentist and the Heart," was given by Dr. H. D. Kitchen, one of Winnipeg's successful young physicians.

The dentist who does not belong to his local society and who does not attend its meetings is passing up an opportunity of enriching his own mind and perhaps encouraging the other fellow. It is generally acknowledged that the professional man who belongs to his local society and attends its meetings is also the man who reads his dental Journals and other professional literature and keeps climbing.

ONTARIO

Dr. George Grieve, of Toronto, is on a holiday to Los Angeles and San Francisco. While there he will attend the meeting of the Pacific Coast Society of Orthodontists on February 14th, 15th and 16th, and contribute to their program. He expects to return via the Panama Canal to New York, and will be home early in March.

The York Collegiate Board was approached on February 14th by the executive of the York Township Property Owners' Association and asked to inaugurate free medical, optical and dental services for students in the three Collegiate Institutes along lines similar to those obtaining in the public schools.

Regulations initiating health insurance—paid for by the province and municipalities, caring for the destitute and their families, and compulsory in all organized municipalities—was passed by the Ontario Government in February. The plan is an agreement between the Ontario Medical Association and the provincial authorities.

Dr. C. W. Hamilton has been appointed city dental officer for the city of Stratford.

Dr. John F. Blair, of London, has been appointed director of dental services at the Westminster Hospital.

Dr. J. S. Hogg, Medical Officer of Health for Preston and Waterloo Counties, states in his annual report that many deaths are caused by over-indulgence in eating and drinking, too much worry about to-day, too much fear of to-morrow, and a lack of true Christian Faith.—By Robert Reade, in the *Toronto Star Weekly*.

Dr. W. J. Milton Lloyd has been appointed director of the dental department of Toronto Western Hospital, Grace Division.

A recent issue of the Gazette announces the incorporation of the Ontario Dental Nurses' and Assistants' Association, with headquarters in Toronto, and aiming to promote good fellowship and unity among the dental nurses and assistants of Ontario.

Doctor B. Temple was elected president of the Toronto West End Dental Association at the inaugural meeting of the new organization.

The Hamilton Academy of Dentistry had a very successful meeting on February 25th, which took the form of table clinics. Dental manufacturers and dealers presented educational demonstrations of the newer products available to the profession.

A delegation of the Toronto Academy made a fraternal visit, and Doctors L. F. Krueger, F. L. Cole, Arnold Mason and Irving Ante assisted the Hamilton members with the program. This fraternal gesture, where neighbouring societies meet together to discuss problems, is excellent. It is conducive to a better understanding of various methods adopted to promote professional education and good fellowship.

The following members of the Hamilton Academy gave clinics: Doctors J. N. Stewart, F. L. Williamson, A. V. Lester, W. D. Clark, W. G. Foster, W. J. McEwen, J. Moser, W. B. Mitchell, C. T. Moyle and R. F. Flach.

The president-elect of the Toronto Academy of Dentistry, Dr. Wm. J. Kerr, arranged and

presided at the February meeting of this society. It was an outstanding success, and attracted a record attendance. The program was provided by about 30 members of the Toronto and Hamilton societies, who gave table clinics and demonstrations. Some four or five were unique because they were different. Dr. Frank Lott demonstrated himself to be no mean photographer. Dr. Bliss showed his audience where and how to catch speckled trout. Dr. Jack Shaunessy is an expert toy maker, and Dr. Paul Harrington is a lover of nature, particularly birds. He has one of the finest collections of birds, birds' eggs, and birds' nests, on the continent. The scientific clinics were very fine, showing refinements of technique in dental operations. The dental nurses and assistants gave timely suggestions for the office. The dental manufacturers provided an interesting feature as they presented their newer products.

QUEBEC

At Montreal a jury under Mr. Justice C. A. Wilson in Superior Court assessed damages of \$1,400 in favour of Olivine Poiré for injuries suffered when a hypodermic needle broke off in the tissues during a mandibular injection.—*Brantford Expositor*.

NEW BRUNSWICK

A dinner meeting of the Saint John Dental Society was held February 5th at which Dr. W. E. Lunney was the guest speaker. His subject was, "Some New Aspects of General Anaesthesia." About twenty-three dentists were present.

A two day convention is to be held in Fredericton this summer, the exact dates of which are not definitely settled. This is a new departure for New Brunswick, and the Fredericton dentists, who have extended the invitation, deserve the whole-hearted support of every dentist in the province in this new undertaking.

NOVA SCOTIA

The Halifax Section of the International Association for Dental Research has had some very pleasing programs during the present year. At the November meeting Professor R. J. Bean gave a very instructive talk on "Re-

generation of Peripheral Nerves." At the January meeting Professor E. Gordon Young presented a particularly interesting and informing paper on "Artificial Calcification of Tissue" or "Calcification in Vitro." At the same meeting Dr. J. S. Bagnall reviewed two magazine articles. For the March meeting the members are looking forward eagerly to a paper by Dr. Donald Mainland on "Bone Structure" as well as a detailed summary of the work done by Dr. O. W. Clough, of Inverness, on "Saliva." The officers of the Section are Dr. A. W. Faulkner, president; Dr. A. Borden Haverstock, vice-president; Dr. Hugh M. Eaton, secretary-treasurer; Dr. G. Kerr Thomson, representative to Council, and Dr. Stephen G. Ritchie, representative on the Board of Editors.

•

The Oral Hygiene Educational Committee has recently been reorganized under the chairmanship of Dr. G. K. Thomson. The committee has arranged for the giving of a course of six lectures to the student nurses of the Victoria General Hospital by two members of the committee. In collaboration with the provincial government the committee has distributed about seven thousand copies of Dr. Bundesen's pamphlet on "The Care of the Teeth" to a selected mailing list.

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The many friends of Dr. Wm. W. Woodbury were delighted to note the honour done him recently by the Board of Directors of the School for the Blind, in re-electing him chairman of the Board.

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Dr. C. Bryce Climo is president of the Rotary Club of Halifax.

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Curling appears to be a fascinating pastime in Nova Scotia this winter, and the names of Crowe, Himmelman, O'Brien, Thomson, MacKintosh, Dawson, Logan and McArthur adorn the public prints almost daily.

PRINCE EDWARD ISLAND

Unanimous endorsement of a province-wide dental health campaign was voiced at a largely attended function in the Canadian National

Hotel on the evening of January 15th, held under the auspices of the provincial health department, at which Dr. Harry Thomson, field secretary of the Canadian Hygiene Council, was the chief speaker. The active assistance of every philanthropic health and service organization in the province was being solicited.

BRITISH COLUMBIA

The dental profession of this province has been stirred by the decision of the Court of Appeal in the "Coultras Case", the case in which Dr. C. J. Coultras organized or caused to be organized a company under the name of The School of Mechanical Dentistry Limited. As a result, the Council suspended Dr. Coultras' name from the register of the College for a period of six months. This decision was appealed before the Supreme Court of British Columbia last September and dismissed; Following this, Dr. Coultras appealed to the Court of Appeal which sat in Victoria, January, 1935. In this trial the appeal was allowed and the order of suspension set aside. A meeting was held of the ethical dentists of Vancouver to hear the report of the College of Dental Surgeons and the announcement that this case was being carried to the Supreme Court of Canada was enthusiastically received by all. Wires and letters were received from various sections of the province and were greatly appreciated. The unfortunate part of the Appeal Court decision was the news report that was printed throughout the country stressing the verbal statement of one of the judges, which statement was not included in the written report constituting the records.

ALBERTA

All western roads lead to Calgary for June 3rd, 4th and 5th, when the Western Canada Dental Society will hold its convention. Prominent lecturers and clinicians will present a program of great excellence. All western men are urged to attend. Perhaps few can afford the trip but none can afford not to be in Calgary for this important meeting. A most cordial invitation is extended to all ethical dentists of Canada, the United States and elsewhere.

NEWS FROM THE EMPIRE

Health Insurance Costs in Great Britain.

The report of the Ministry of Health for the fiscal years of 1933 and 1934 shows that there were 15,150,000 insured persons entitled to medical benefits. There were 15,500 doctors in insurance practice, and these men received approximately \$2,000 each annually, out of which they paid all expenses except mileage costs. The physician's income in each case was augmented by private practice, but as a rule at very low fees, owing to the standard set up by the insurance system.

The total cost of medical benefit was \$42,100,000. The average expenditure for medical relief was \$2.77 per person annually, and the insurance physicians received approximately \$2.00 per person annually. The total payment for cash benefits due to sickness and disablement was about \$4.92 for each insured person. Insured men pay into the fund approximately 9 cents a week and women 8 cents a week, or about \$4.50 for the men and \$4.00 for the women annually.

GENERAL NEWS

Shaping Dental Clinic Policies. The Hudson County Dental Society, a component of the New Jersey State Dental Society, recently added this provision to its constitution:

"Any member who affiliates himself or herself with, or continues to work in his or her capacity as a dentist of a hospital or organization of any kind, unless the said clinic is approved by the Society, shall be liable to censure, suspension, or expulsion."

The president of Toronto University is quoted by the *Mail and Empire*, Toronto, on December 8th, as saying that if he had to choose whether to turn out of the university young graduates with brilliant intellects and little regard for human understanding, or those with less brains and bigger hearts, he would unhesitatingly choose the latter.

In celebration of the 15th anniversary of its foundation, the Federation of the Dental Surgeons of Austria have resolved to offer three prizes of the total value of 1,000 Austrian shillings, for the three best articles on practical dentistry not previously published.
—*From Dental Items of Interest.*

■
Dangerous Diseases. Heart disease still stands at the top of the list of human ailments as the most dangerous in contributing to the mortality rate. In these days of fast living—speed, excitement, thrills, uneasiness, anxiety, restlessness—this is probably not surprising. In this modern day we claim to have found the secret of success in contributing to the happy and contented life, but the only thing we seem to have accomplished has been to make it a "short and merry one".

—*From the Chatham News.*

IN MEMORIAM

BRUCE A. DICKSON, of Moose Jaw, Saskatchewan, died early in February after an illness of several months. Every dentist in the city attended the funeral service at St. Andrew's Church. The Masonic Order conducted part of the service and Dr. Frank Harwood sang.

W. E. HUGHES, of Toronto, on January 27th. Dr. Hughes came from Innisville, and after graduating from the R.C.D.S., practised in Toronto.

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LE SUCEMENT DU POUCE

Par le DOCTEUR HENRI VILLAIN, D.D.S., U. of P. Président de l'Association générale
Syndicale des Dentistes de France. Professeur à l'Ecole Dentaire de Paris.

LE SUCEMENT du pouce et ses multiples conséquences constituent une question assez complexe, et certes très intéressante pour nous au point de vue orthodontique.

Depuis de longues années, j'ai été frappé, et vous aussi certainement, par les dysmorphoses et les malpositions des dents consécutives au sucement du pouce. Pour cette raison, je considère, jusqu'à nouvel ordre, cette habitude comme vicieuse et nocive.

Aussi fus-je littéralement stupéfait en voyant récemment l'affiche de publicité du Bal des Petits Lits Blancs, représentant un bambin endormi, suçante deux de ses doigts. Cette affiche tirée à un très grand nombre d'exemplaires fut placardée dans tout Paris, et des réductions furent, pendant des semaines, affichées dans les plus importants magasins de la Capitale. Elles semblaient donner en exemple cette très mauvaise habitude.

N'a-t-on pas vu également, au cours de cet hiver, à la porte d'un grand artiste photographe de l'avenue des Champs Elysées, là où se promènent journellement un très grand nombre d'enfants, le portrait d'un superbe bébé suçant son pouce.

Enfin, au Salon de cette année de la Société des Artistes Français du Grand Palais, à la sculpture, nous avons pu voir, oh horreur! une superbe statue de M. A. Chartier, portant le No 3635 et représentant une Eve énorme, tenant sur chacune de ses épaules un petit enfant. Celui de gauche a les bras pendants, ne sachant pas trop qu'en faire; celui de droite alors, lui, est bien occupé; il suce avec amour—au point d'en avoir les joues gonflées—son pouce de la main droite.

Ce geste tend donc à se vulgariser de plus en plus, puisqu'il frappe et retient en ce moment l'attention d'un grand nombre d'artistes.

Tout ceci montre l'esprit observateur de

ces artistes différents me direz-vous; c'est vrai, mais quoique profanes sur les causes ils se sont arrêtés sur le même geste.

Je fus encore plus alarmé quand au cours d'une enquête particulière auprès de personnes s'occupant de nourrissons, j'appris qu'un très grand nombre de médecins pédiatres, conseillent de laisser les enfants sucer leur pouce—et même de les y inciter—pour éviter qu'ils ne pleurent.

C'est alors que j'ai décidé de m'occuper plus spécialement de cette question, en m'entourant d'une certaine collaboration, pour essayer de solutionner ce grave problème.

Qu'il me soit permis tout de suite de citer et remercier mes confrères et amis Melle LIGER et Paul TACAIL, tous deux orthodontistes distingués et justement réputés.

J'eus recours d'abord à la T.S.F. pour essayer d'entraver un peu cette mode et toucher le plus de parents possible; au cours d'une causerie périodique sur l'Hygiène dentaire, que j'ai l'habitude de faire au nom de la Confédération des Travailleurs Intellectuels, je pris pour titre, le 29 Avril, au Poste de la Tour Eiffel, "LE SUCEMENT DU POUCE."

Je me suis efforcé ce jour là de faire comprendre à ceux qui étaient à l'écoute, les dangers et les perturbations que pouvaient amener à l'organisme en général et au développement des mâchoires en particulier, cette par trop mauvaise habitude qui tend hélas à se généraliser de plus en plus.

Par des conseils pratiques j'ai essayé de montrer aux jeunes mamans ce qu'il fallait faire, dès le jeune âge, pour enrayer ce mal.

Aujourd'hui nous posons le problème

devant des praticiens qualifiés, pour nous aider à le résoudre.

Après informations et études des cas, nous croyons qu'une différence doit être établie entre le tétage du pouce et le sucement. Je dis nous croyons, car devant un nouveau né nous sommes en quelque sorte astreints à faire de la "médecine vétérinaire"; c'est notre bon sens clinique seul, qui, basé sur des constatations orthodontiques de chaque jour, fait prévaloir une opinion sans que nous puissions être catégoriquement affirmatifs.

Si nous établissons ce diagnostic différentiel c'est que nous avons remarqué plusieurs points de divergence: Le tétage apparaît dès les premières semaines qui suivent la naissance: ce qui tendrait à nous le faire considérer comme un acte animal, physiologique, donc acceptable.

Le sucement, au contraire, apparaît ultérieurement, à l'âge où se manifestent certaines habitudes vicieuses, et c'est une des raisons qui nous le fait assimiler à celles-ci.

En second lieu, dans le tétage du pouce, le poing est fermé en pronation et les faces du pouce sont perpendiculaires à la ligne d'occlusion des dents. Dans le sucement, la face palmaire et la face dorsale sont en contact avec les dents. S'il s'agit de plusieurs doigts, c'est la face dorsale qui est supérieure. S'il s'agit du pouce, c'est son côté interne qui est appliqué contre la région antérieure du palais et les faces linguales des incisives supérieures.

Du fait de cette variation dans les positions, on comprend que ce geste du doigt dans la bouche peut avoir des conséquences totalement différentes, et c'est l'étude de ces répercussions qui va nous permettre précisément de dire que le tétage peut être normal alors que le

sucement est incontestablement néfaste.

Mais reprenons point par point les éléments de notre diagnostic différentiel.

Pourquoi l'enfant tète-t-il son pouce?

Une explication possible est celle de l'alimentation: Dans les crèches, les nurseries, et même lorsque l'enfant est soigné par sa maman, qu'il soit élevé au biberon ou au sein, on le nourrit d'une manière étalon, c'est-à-dire qu'il doit absorber une quantité de lait déterminée pour chaque jour et contrôlée par des pesées.

Or, tel lait peut avoir une valeur nutritive inférieure à tel autre. Et tel nourrisson peut avoir besoin de manger plus que tel autre. Chez les enfants plus grands, et chez l'adulte, l'alimentation varie suivant les individus: les uns absorbent une dose alimentaire moyenne correspondant à la dose étalon dont on donne la formule dans les cours d'hygiène; d'autres sont capables de manger beaucoup plus disons le double même; d'autres au contraire ont un tout petit appétit et cela souvent sans qu'aucune considération de taille, de poids ou de genre de vie n'intervienne. Eh bien nous croyons que chez le nouveau-né les faits sont identiques. Un bébé qui reçoit juste la quantité de lait jugée nécessaire peut avoir encore faim; ne sachant exprimer son besoin, et dans l'impossibilité d'obtenir du supplément de la maman ou de la nurse qui estime l'avoir allaité suffisamment il tète son pouce pour se donner, par l'imitation physiologique, l'illusion de manger.

N'oubliez pas que de plus, un défaut très humain, la gourmandise, peut influencer les capacités d'absorption. Le nourrisson gourmand, n'ayant pas la possibilité de se procurer plus qu'on ne

lui accorde, donne le change à sa gourmandise en tétant son pouce.

Une seconde explication est relative à l'évolution des dents. Les premières dents font leur apparition vers le 6^e mois, mais l'évolution sous gingivale précède la "percée"; et même si nous ne constatons rien de visu, l'enfant souffre; l'inflammation et le travail intra-gingival l'agacent; et pour se soulager il éprouve le besoin de frotter sa muqueuse gingivale, comme tout jeune animal qui "fait ses dents" mordille instinctivement les corps semi-durs qui se trouvent à sa portée. Sans doute ce geste de serrer le pouce entre les crêtes alvéolaires est-il nécessaire? Sans doute correspond-t-il à un massage bienfaisant des régions congestionnées? Peut-être a-t-il une influence favorable sur l'évolution dentaire? Et devant sa logique peut-être aurions-nous tort de l'empêcher? D'ailleurs s'il soulage le petit qui souffre pourquoi nous y opposer tant que nous n'en verrons pas la contre-indication formelle?

En troisième lieu, puisque nous comprenons la nécessité—instinctive chez l'enfant—des jeux et de l'exercice pour le développement musculaire général nous pouvons admettre que l'enfant par instinct également, cherche à augmenter la tonicité des muscles labiaux et faciaux en les faisant travailler par des exercices de tétée. Comme nous considérons favorablement l'influence de la tétée rationnelle sur l'équilibre musculaire labial et facial, nous pouvons peut-être tolérer le tétage du pouce comme un exercice complémentaire?

Enfin, toujours par instinct, le bébé sent peut-être la nécessité d'exciter sa salivation. Ce qui serait une 4^e cause du tétage du pouce. Et là encore, nous pouvons penser que l'excitation secré-

toire influence heureusement la formation des glandes salivaires?

Enfin, pour mémoire, je rappelle que d'après certains médecins ce geste existerait en compensation de la glassoptose. Mais cette théorie, très particulière, n'ayant qu'un nombre limité d'adeptes, nous nous abstenons de l'envisager en détail pour éviter les polémiques.

Parlons maintenant du sucement.

Il se manifeste tardivement. C'est en général parce que l'enfant a primitivement tété son pouce qu'il a pris "l'habitude" de mettre toujours un doigt dans la bouche, remplaçant un "travail" qui n'est plus nécessaire par une "position" plus facile—par "habitude"—il devient "suceur de pouce." J'insiste sur ce mot "habitude" car c'est là, neuf fois sur dix, la cause du sucement du pouce. Et de ce fait nous pouvons d'emblée ajouter le qualificatif "vicieuse", puisque rien ne justifie ni excuse ce fâcheux défaut.

J'ai dit que le sucement était la suite dégénérée du tétage du pouce, neuf fois sur dix. C'est donc qu'une fois sur dix, le sucement est primitif. Et dans ce cas, l'enfant peut avoir trouvé ce geste tout seul—ce qui est assez rare—ou bien il le fait par contagion d'avoir vu d'autres bébés le faire; ou bien encore, et plus souvent hélas! il le fait parce qu'on le lui a enseigné. Combien de mamans ignorant qu'elles tuent leur enfant, leur donnent une sucette parce qu'il pleure, pour le faire taire, et même s'il est sage, pour l'occuper et éviter qu'il ne pleure! Et depuis que cet instrument de mort a été combattu, combien de mamans le remplacent par le pouce qu'elles introduisent dans la bouche de leur bébé sans aucune autre cause que celle de leur sottise.

Bref le sucement de pouce ne reconnaît pas, comme le tétage, quelques raisons

valables: L'enfant est assez grand pour faire comprendre ses besoins ou ses souffrances. Les dents ne le taquent plus, commençant à marcher et à parler, il trouve sainement l'exercice dont il a besoin.

Et quel que soit le côté vers lequel on s'oriente, on ne peut que conclure au caractère d'habitude vicieuse du sucement du pouce.

Un parallèle nous reste encore à établir entre les répercussions sur l'organisme dues aux positions différentes du pouce dans le tétage et dans le sucement.

Par la position même du doigt, le tétage du pouce nous apparaît à priori comme ne pouvant être nocif. Le pouce est en effet serré entre les crêtes alvéolaires et entre les lèvres; les conséquences ne peuvent être, comme nous l'avons vu précédemment, que le massage des gencives, la stimulation de la circulation sanguine locale, l'apaisement de la douleur d'évolution dentaire, la tonification des muscles labiaux et faciaux (et peut-être la contribution à la formation des glandes salivaires?)

Au contraire, lorsque l'enfant suce ses doigts, ceux-ci exercent une pression sur la région antérieure de la voûte palatine et sur les faces linguales des incisives supérieures. Cette pression est encore renforcée par celle de la langue qui entre en jeu, et cette action constante rapidement déforme la région malléable sur laquelle elle s'exerce, avançant et creusant la partie palatine antérieure poussant en avant les incisives supérieures, davantage dans leurs parties coronaires libres créant des versions vestibulaires mais également dans leurs parties alvéolaires, déplaçant tout le massif antérieur supérieur.

Lorsque plusieurs doigts sont intro-

duits en bouche, côté dorsal face au palais, les dents inférieures peuvent également subir quelque perturbation dans leur rangement et dans leur inclinaison sous l'impulsion des fléchisseurs des doigts.

Mais les déformations sont beaucoup plus importantes et beaucoup plus graves lorsque c'est la face palmaire interne du pouce qui est en contact avec le palais. En effet la position de la main confère alors aux fléchisseurs du pouce le maximum de puissance et c'est très rapidement que les perturbations maxillaires et dentaires que je viens de signaler apparaissent. En outre pour exercer sa force naturelle de flexion et pour des raisons logiques d'équilibre, le pouce qui agit comme un levier prend appui par sa phalange sur les dents inférieures et par le métacarpien sur la mandibule et le menton.

En conséquence de ceci, les incisives inférieures sont lingualées, la pression sur le menton s'oppose au développement de celui-ci; et la mandibule, n'étant pas une masse fixe, peut céder dans son ensemble reculant dans l'articulation temporo-maxillaire. Il en résulte la création d'anomalies multiples telles que: mal-occlusion distale inférieure, rétrogénie ou microgénie, rétroglissement, etc.

Ajoutons encore que l'enfant, au cours du suçement, avale de l'air et que cette aérophagie est sous de multiples points fort nuisible à la santé, du fait particulièrement des répercussions des troubles intestinaux qu'elle provoque.

CONCLUSION

De ceci que devons-nous conclure?

Avant tout nous nous élevons de toute notre force contre ces médecins qui disent aux parents: Votre enfant pleure? Faites-lui sucer son pouce vous aurez la paix.

Si dans les premiers mois de la vie

l'enfant "invente" le tétagé du pouce c'est que peut-être il en a besoin, ainsi que nous l'avons dit précédemment, et si nous sommes certains que son alimentation n'est pas défectueuse, peut-être pouvons-nous le laisser faire. Mais entre "laisser faire" et "provoquer" quelle différence! Nous sommes absolument ennemis de la provocation car, si l'enfant n'a pas trouvé seul le geste de téter son pouce, c'est qu'il n'en a pas besoin. Et nous ne pouvons que blâmer les parents qui suppléent à l'usage de la sucette, en habituant l'enfant au suçement du pouce. Leur ignorance est criminelle et nous devons multiplier nos efforts et faire autour de nous une propagande active pour leur dessiller les yeux, en même temps que nous prions tous ceux qui savent de nous aider dans notre tâche.

Au point de vue prophylactique, que faire me direz-vous? Je pense en toute conscience qu'il faut réagir de très bonne heure dès que l'enfant a tendance à porter à tout moment, et surtout en dormant, son pouce ou ses doigts dans sa bouche.

Aux jeunes mamans voici le conseil que j'ai donné pour les tout petits: Agir aux premiers symptômes, c'est-à-dire surveiller le nouveau-né dès sa naissance, et si l'enfant a tendance à porter son pouce ou ses doigts dans la bouche, il faut pendant quelques jours lui attacher le bras.

La manière la plus simple, qui nous a réussi pour nos propres enfants ou pour ceux de nos consultants, est la suivante: Coudre sur la manche de la brassière un petit cordon que l'on noue à un ruban mis autour du linge de l'enfant.

Au bout de huit, dix ou quinze jours au maximum, l'enfant aura perdu cette mauvaise habitude et vous aurez fait vis-à-vis de lui votre devoir de maman prévoyante.

Et maintenant, pour conclure, n'allez pas crier à l'enfant martyr!

Songez seulement, que ce petit être que vous chérissez tant, et vous avez raison, a besoin d'être guidé dans ses désirs, et ce faisant vous lui rendrez un signalé service pour l'avenir, à lui-même d'abord et à sa race ensuite.

Pour les autres, c'est-à-dire ceux qui sont déjà en âge de parler et de comprendre, il faut essayer de les raisonner et de leur montrer leur erreur.

Le Dr. ROY, en 1926, a fait à la Société d'Odontologie de Paris une communication sur "l'importance du facteur psychologique dans le traitement des enfants." Il a donné les exemples d'une petite fille de 3 ans et d'un petit garçon de 4 ans qui tous deux suçaient leur pouce, au grand désespoir des parents qui avaient tout essayé pour les en empêcher.

En se moquant de la première, et en

faisant raconter au second qu'il deviendrait laid et malade s'il continuait ainsi à son âge; ces enfants avaient cessé leur mauvaise habitude.

Ce sont là des moyens, certes efficaces, en existe-t-il d'autres? C'est ce que nous venons vous demander, afin de nous aider à lutter contre un péril qui tend à s'aggraver chaque jour davantage.

J'ajouterai pour terminer, que certes cette habitude vicieuse n'est pas nouvelle. Voyageant en Italie, il y a peu de temps et visitant un des plus beaux musées, celui, de Sienne, je fus attiré par un superbe tableau de Domenico di Bartolo qui représentait La Vierge tenant sur ses genoux l'Enfant Jésus, ayant deux doigts dans la bouche; tableau qui remonte à 1433.

Ce n'est d'ailleurs pas une raison pour ne pas essayer de faire disparaître cette dangereuse pratique.

RAPPORT DU COMITE DE BIENFAISANCE DE L'ASSOCIATION DENTAIRE CANADIENNE

Présenté à la Chambre des Délégués de l'Association Dentaire Canadienne à Toronto.
mai, 1934.

Traduit du texte anglais par Jacques Samson, D.D.S., Québec.

L'ASSOCIATION Dentaire Américaine inaugura son Fonds de Secours pour les dentistes, en 1912. Aucun déboursé ne fut fait avant 1925, alors qu'on avait réussi à réunir la somme de \$150,000. . . Seuls les intérêts du capital peuvent être employés. Aujourd'hui le

capital de ce fonds se chiffre à environ \$320,000. A peu près 25% des membres de l'Association Dentaire Américaine y ont contribué: la majorité versant \$1., un certain nombre \$2. et quelques-uns \$5 ou \$10. Les sociétés d'état, les sociétés locales, les manufacturiers, les

maisons pharmaceutiques et quelques laboratoires dentaires sont aussi au nombre des souscripteurs.

L'Association Dentaire Ontarienne possède un fonds identique fonctionnant par la vente de timbres de Noël et au moyen des revenus provenant des titres que détient ladite Association. Les timbres de Noël sont adressés aux 1,800 dentistes de l'Ontario. En 1931, 564 souscrivaient \$657.00; et en 1932, 396 versaient \$471.00; ce qui donne une moyenne d'à peu près 25% des membres souscrivant environ \$1.10 chacun. Le coût des timbres, plus frais postaux etc., se chiffre à environ .10 centins par feuille de 100 timbres.

Afin de nous assurer si le but de ce fonds ne pouvait être réalisé au moyen de quelque forme d'assurance, nous nous adressâmes à deux compagnies sérieuses: l'une d'assurance-vie et l'autre d'assurance-accident et maladie. Toutes deux se déclarèrent peu intéressées à entreprendre aucune forme d'assurance groupe

pour la protection d'hommes vivant dans des conditions si différentes, les expériences passées ayant démontré la faillite d'une telle méthode.

Depuis la préparation de ce rapport, une autre suggestion d'assurance a été faite dans le numéro de février du "Dominion Dental Journal", page 59. Cette proposition sera étudiée.

Le bureau de poste peut fournir un sceau nous permettant d'estamper les enveloppes-réponse et l'Association n'aurait à payer 4 sous de port que pour les enveloppes qui lui seraient retournées.

L'Association Dentaire Américaine inclut, avec sa circulaire, une enveloppe ordinaire non affranchie, tandis que l'Association Tuberculeuse de cette ville (Toronto) ajoute, avec sa circulaire, une enveloppe-réponse timbrée.

On compte au Canada environ 3,880 dentistes; de ce nombre à peu près 2,200 sont plus ou moins actifs dans leurs organisations dentaires provinciales.

CONCLUSIONS

Nous soumettons à votre bon jugement les suggestions suivantes de votre Comité.

Nous approuvons le plan de créer un Fonds de Secours par la vente des timbres de Noël aux dentistes, laboratoires, détaillants de produits dentaires, maisons pharmaceutiques. Nous pourrions compter encore sur les souscriptions de l'Association Dentaire Canadienne, des Associations provinciales et des diverses Associations locales. Comme environ la moitié des dentistes du Canada résident dans la province d'Ontario, nous recommandons, afin d'assurer un plus grand succès à notre fonds de secours, que l'Association Dentaire Ontarienne soit

persuadée de mettre fin à la vente de timbres à son seul profit dans sa province, dès que l'Association Dentaire Canadienne inaugurera sa campagne en faveur de son propre Fonds de Secours. La vente des timbres ne devrait pas se faire trop hâtivement. Tous les dentistes canadiens devraient être tout d'abord renseignés sur le but et l'objet de ce fonds. Car cette oeuvre de bienfaisance ne fonctionnera pas tant pour nous que pour ceux qui nous suivront, et un mauvais départ conduirait vite à l'insuccès. Il importe donc de prendre le temps de bien expliquer aux dentistes le but, la raison d'être de ce projet, ainsi

que l'appui que lui donne l'Association Dentaire Canadienne.

Une faible proportion seulement des dentistes au Canada connaissent réellement l'Association Dentaire Canadienne, et l'explication de ce projet au moyen de circulaires, tel que proposé, ne donnerait pas satisfaction et serait dispendieuse. Toutefois, la A. D. C. commencera bientôt, nous l'espérons, la publication de son journal qui sera distribué à tous les dentistes du Dominion. Ce journal sera d'un précieux secours au Comité de Bienfaisance pour expliquer à peu de frais, la fin sociale de ce Fonds de Secours; ce qui ne pourrait être fait actuellement que par circulaires trop souvent jetées au panier avant d'être comprises ou même lues.

Si la publication de ce journal commençait cet été, nous devrions lancer notre campagne de la vente du timbre pour le prochain Noël 1934. Autrement, il serait préférable d'attendre au moins plusieurs mois après la publication du premier numéro afin de pouvoir donner au projet la publicité nécessaire, sans trop de frais.

Il est évident qu'aucun plan de secours sérieux ne peut être mis à exécution sans l'accumulation d'un bon fonds de réserve. Nous suggérons donc qu'aucun paiement ne soit fait avant un certain nombre d'années, pour permettre la formation d'une forte réserve. Nous croyons, bien que plusieurs se trouvent présentement dans un besoin pressant, que tout déboursé prématuré épuiserait vite nos fonds et nuirait au succès du projet. En effet, personne ne contribuerait à un fonds que l'on dépenserait aussi vite qu'il se souscirait.

L'Association Dentaire Américaine (voir plus haut) ne fit aucun paiement

avant que la réserve n'atteignit \$150,000. Mais, pour nous moins nombreux au Canada, il n'est nullement besoin d'attendre l'accumulation d'un tel capital.

Au cas où il aurait divergence d'opinion sur la manière et le temps de dépenser ces fonds, nous suggérons qu'aucune somme ne soit dépensée pour des secours avant cinq ans, ou jusqu'à ce qu'une somme de . . . (le montant à être déterminé par l'Association Dentaire Canadienne) soit souscrite. Seuls les intérêts du capital pourraient être versés en secours.

Plus tard, la procédure pour l'étude des requêtes de secours sera établie. Cette enquête sera faite tout d'abord par la société dentaire locale. Si elle est favorable, le résultat en sera transmis à l'association provinciale et cette dernière, après approbation, la remettra finalement au Comité de Secours de l'Association Dentaire Canadienne. Nous croyons, en plus, que lorsque des déboursés seront faits, disons dans cinq ans, la part du fonds de secours de l'A.D.C. devrait être de 75 % du total. L'Association Provinciale contribuant pour 20 % et l'Association locale 5 %. En divisant ainsi le montant du secours entre ces trois corps, la responsabilité des paiements aux secourus sera assumée par chaque partie. Si l'A.D.C. contribuait pour le total du secours, il se pourrait fort que les autorités locales essayassent de retirer le plus d'argent possible, d'où menace d'épuisement pour les fonds.

Tous ceux qui auraient été membres de l'A.D.C. depuis au moins cinq ans auraient droit aux secours, après enquête faite selon la procédure ci-dessus décrite.

En attendant, votre comité exécutif s'efforcera de trouver un modèle de timbre de Noël qu'il soumettra à votre

approbation. Le journal de l'A.D.C. pourrait encore être utile en organisant un concours de modèles pour ce timbre.

Ci-inclus vous trouverez les timbres officiels de l'Association Dentaire Américaine et de l'Association Dentaire de l'Ontario.

Le tout respectueusement soumis de la part du comité de bienfaisance et de son exécutif.

(signé)

L. T. ALLEN, *Lethbridge, Alberta*
Président.

Extraction à froid suivie d'une angine de Ludwig: Le professeur André Mar-masse de Paris rapporte un cas d'angine de Ludwig se terminant par la mort, et consécutif à une extraction à froid de dent de sagesse inférieure.

Il tire les conclusions suivantes de cette observation:

10.—On ne peut prévoir un phlegmon gangréneux après une avulsion dentaire.

20.—Une prophylaxie par sérothérapie antigangréneuse est inapplicable au cabinet du dentiste.

30.—Les faibles ressources de la thérapeutique préventive usuelles consisteront dans:

(a) Anesthésie régionale de préférence à l'anesthésie locale;

(b) Pansement alvéolaire antiseptique après toute extraction de dent de sagesse inférieure.

Le SIECLE MEDICAL (1er février 1935, p. 16.)

La Société de Stomatologie de Québec s'est réunie le 23 février dernier, sous la présidence du Dr Donat ROY. Le conférencier, le Dr Paul GEOFFRION, professeur à l'Université de Montréal, traita de la prophylaxie des malocclusions et fut remercié par le Dr Jean DALLAIRE.

Intoxication barbiturique traitée par des injections intraveineuses d'alcool à 30 p. 100. Le numéro du 8 septembre, 1934, du *Paris Médical* rapporte la guérison d'un individu qui, dans le but de se suicider, avait absorbé vingt tablettes de luminal. On lui injecte d'abord 20 cc. d'alcool éthylique à 30 p. 100. Deux heures plus tard, on renouvelle l'injection; puis, une heure plus tard, troisième dose d'alcool. Sept heures après l'administration de ces 60 cc. d'alcool, le malade est presque rétabli. —P. H.

Pour le blanchiment des dents: David W. Weill, Park Ridge, N.J., prétend qu'une solution saturée de perborate de soude dans du peroxyde d'hydrogène donne d'excellents résultats.

J. A. D. A. (Février 1935, p. 313.)

Traitement de l'alvéolite: P. H. Belding, D.D.S., et L. J. Belding, M.D., recommandent une solution de 10 % de tartrate de bismuth potassium dans de la glycérine.

J. A. D. A. (Juillet 1934, p. 1226.)

Le IIe, Congrès International de Stomatologie se tiendra à Bologne, au printemps 1935, sous la présidence du Docteur Beretta, professeur à l'Université de Bologne.

The Journal of The Canadian Dental Association

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MY WORK

*"Let me but do my work from day to day,
In field or forest, at the desk or loom,
In roaring market-place or tranquil room;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray—
"This is my work; my blessing, not my doom;
Of all who live, I am the one by whom
This work can best be done, in the right way."
Then shall I see it not too great, nor small,
To suit my spirit and to prove my powers;
Then shall I cheerful greet the labouring hours,
And cheerful turn, when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best."*

—HENRY VAN DYKE.



GEORGE KERR THOMSON, D.D.S., F.A.C.D.

Halifax, Nova Scotia.

Past-President of the Canadian Dental Association; Dean of the Faculty of Dentistry, Dalhousie University; Past-President of Dominion Dental Council. As we go to press we learn with deep regret that Dr. Thomson died on May 2nd. An obituary notice will appear in our June issue.

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SOME PHASES OF PREVENTIVE DENTISTRY OF SPECIAL CONCERN TO CANADIAN DENTISTS

By WESTON A. PRICE, D.D.S., M.S., F.A.C.D., Cleveland, Ohio*

IT is indeed a pleasure to extend felicitations to the dental profession of Canada on the achievement of a National Journal. The effect will not be simply additive; it will multiply manyfold the influence and power of your Association.

The role of nutrition as the dominant factor in immunity to dental caries seems now to be adequately established though probably not yet generally appreciated. That irregularities of the dental arches and malformations of the face can also be demonstrated to be the result of faulty nutrition during the early formative and growth periods probably will not be more readily accepted in the light of past and current teachings.

In the light of these new advances more efficient and practical preventive programs become possible. These will provide the members of the dental profession, whose guard-duty is at Nature's most important observation post, with greatly enlarged opportunities for service both in the care of individual patients and for assisting in directing the needed special nutritional programs of individuals and families. For the Canadian dentist

this offers some very special problems as well as unusual opportunities for helpfulness.

Many observers are noting that dental caries and some other degenerative processes are increasing in severity in certain districts of the United States and Canada and this in spite of increased efficiency of health organizations and institutions. If this be true it will be important to study possible contributing influences. This will lead us at once to a consideration of the principal controlling factors which determine the efficiency of a dietary. In other words what conditions establish, whether in a given group of individuals, the available nutrition shall provide a high or a low immunity to dental caries. Fortunately, remnants of primitive races are able to teach us much from their accumulated wisdom in this important matter.

REVIEW OF INVESTIGATIONS.

It may help us if we review briefly the data that have developed from my investigations of primitive racial stocks in various parts of the world, and to note what factors are common to various

**Dr. Price needs no introduction to the dental profession of Canada. He has climbed to the heights of international fame as a research worker, and now presents this excellent manuscript upon the subject of the Health of the Nation, to his brother dentists and to the people of the land of his birth, a heritage he highly esteems.—The Editor.*

groups whether with high immunity or low immunity to dental caries; similarly to note what factors are associated with high excellence of dental arch and facial development and what factors with irregularities. It is very important that we shall establish standards of excellence; in other words controls. When we undertake to find such a group of individuals in any modern environment we may have the best that that community can provide but this may be below the highest ideal to which nature has arrived and accordingly not such an environment as will readily disclose the fundamental controlling factors. It is, therefore, very desirable that our studies shall include many groups with exceptionally high immunity to dental caries and with highly perfect dental and facial development.

In my studies of the vitamin content of dairy products in different parts of the world to which I shall refer later, I have found not only wide variations for the same districts at different times of the year but also a wide range for different districts at the same time. Apparently all of this was related to the nutrition of the dairy animals chiefly cattle, which nutrition was related to the period of growth and to some specially high vitamin foods in special districts where there was a long period of rest and a short period of rapid growth such as occurs in the high mountain valleys of Brazil, America and in several European and Canadian districts. On this basis I undertook to study the possible relationship of such growth factors to the presence or absence of dental caries and facial and dental arch deformities, when the individuals were compelled to limit their nutrition, in considerable part, to such spe-

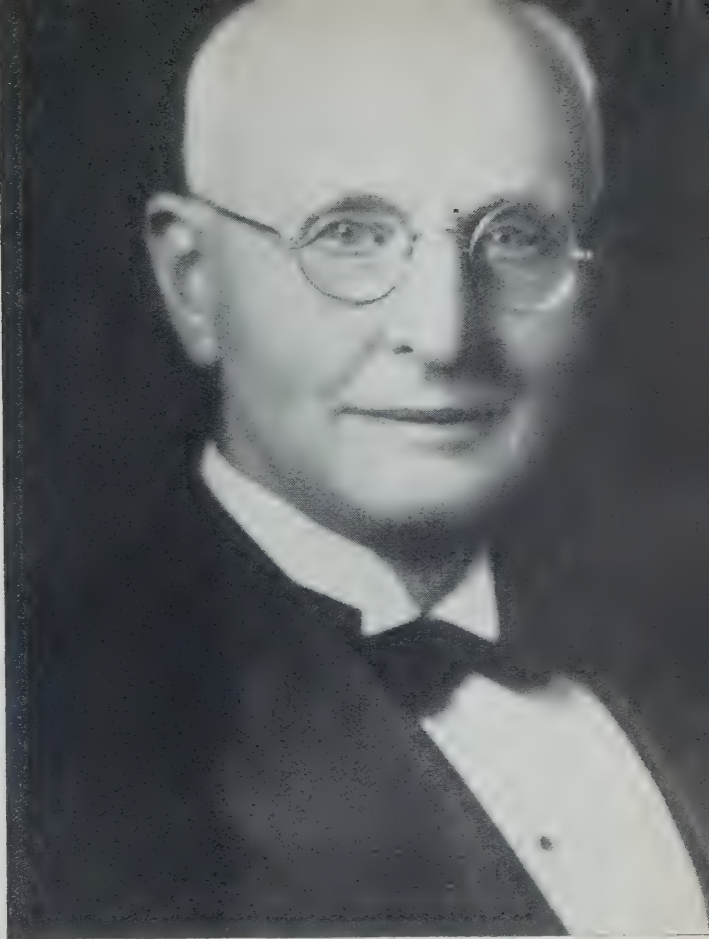
cially favourable dairy products and to plant foods grown in that environment.

PRIMITIVE GROUPS.

For this I have studied remnants of several primitive racial stocks where their physical isolation had sheltered them from the influences of our modern civilization, and by studying them and their foods and their methods of living, certain underlying factors were found to be common to all these primitive groups, even though they were living in different countries and on very different foods. This permits us to critically examine modern civilizations at their points of contact with the primitives, and by studying them and their problems with the standards of the immune primitives, note the factors which are contributing to dental caries and facial and dental arch deformities.

By studying the children in four high isolated valleys in Switzerland, Loetschental, Visperterminen, Grächen and Ayer in the Swiss Alps,^{1 2} I found the incidence of dental caries to be only 4.6 per cent. of the teeth studied. Here oral prophylaxis and modern equipment for practising it were largely unknown. At St. Moritz,³ however, at approximately the same altitude, which is a highly modernized community with excellent training in oral prophylaxis, the incidence of caries was 29.8 per cent. of teeth studied. At Vissoie and Zinal,² which were partially modernized, 22 per cent. of the teeth examined had been attacked by dental caries. At Herisau,³ in the plains country of Switzerland, also a highly modernized community with splendid instruction and equipment for mouth cleanliness, the incidence of caries was 24.7 per cent. of the teeth examined.

WESTON A. PRICE



Similar studies were made in the Outer Hebrides,⁴ off the west coast of Scotland and revealed that in the isolated districts of the Isles of Lewis and Harris only 1.2 per cent. of the teeth examined had been attacked by dental caries. Oral prophylaxis was almost unknown. In the ports and modernized sections the incidence of dental caries was found to be 30 per cent. of the teeth examined.

The natural foods available for these two primitive groups were very different in origin but similar in chemical content, as will be shown presently.

ESKIMOS AND INDIANS.

Similarly, studies were made of remnants of the primitive Eskimos and In-

dians of Alaska and northern Canada and of those individuals of these groups who are at the point of contact with modern civilization. The Eskimos of western and northern Alaska were reached by aeroplane and for several groups who had been but little influenced by modern civilization, hence living entirely on native foods, the per cent. of teeth found to have been attacked by dental caries was 0.09, that is, only two teeth out of 2,138 in seventy-two individuals.⁵ No effort apparently had even been made at oral prophylaxis in these groups.

At the point of contact with modern civilization, where a government supply boat comes once a year to provision a government station, the incidence of

caries among the local Eskimos⁵ increased to 13 per cent. of the teeth, or 394 teeth out of 2,254 in eighty-one individuals. At this point oral prophylaxis was being taught and practised and, in spite of it, the increase in dental caries was 144 fold. The controlling factors in producing these changes will be shown presently to be nutritional.

The natural food of the primitive Eskimo was almost entirely the animal life of the sea.

Similarly, quite primitive Indians were sought for and found in northern Canada who were living practically entirely on wild animals. Their physical isolation from the influence of modern civilization was very complete.

Three groups were found, consisting of seventy-six individuals with 2,144 teeth and without a single tooth having been attacked by dental caries. In a total of 2,464 teeth examined for eighty-seven individuals in four groups, only four teeth had ever been attacked by dental caries, or 0.16 per cent.⁶ These people knew nothing of oral prophylaxis as understood by modern civilizations.

For the groups of these Indians at the point of contact with modern civilization, 21.5 per cent. of 1,878 teeth in seventy individuals, or a total of 405 teeth, had been attacked by dental caries,^{6 7 8} This is an increase of 134 fold. These individuals had been taught oral prophylaxis.

Knowledge of and equipment for oral prophylaxis are in direct proportion in these groups with the incidence of dental caries and dental caries is in direct proportion to the displacement of native foods with modern foods.

SOUTH SEA ISLANDERS.

All of the above groups are in the

northern hemisphere and temperate zone. While they represent a wide range in type and in kind of nutrition, climate and racial stock, they do not provide for a comparison, a consideration of people in tropical and sub-tropical countries. This strongly emphasized the need that there should be included in this investigation a critical examination of groups of individuals in the South Sea Islands. To accomplish this, extended field studies were made in 1934 in eight archipelagos of the Pacific Ocean, including large groups of each Melanesian and Polynesian racial stocks. Owing to the vast extent of the Pacific waters and the limited number of transportation lines it became very difficult to arrange a convenient itinerary. This, however, was accomplished satisfactorily by going south through the more easterly archipelagos, namely, the Marquesas Islands, Society Islands and Cook Islands and then westward to the Tongan Islands in the southern central Pacific near New Zealand and then westward to New Caledonia near Australia. From this group we went northward to the Fiji Islands, also in the western Pacific, and thence to the Samoan Islands in the Central Pacific south of the Equator and to the Hawaiian Islands north of the Equator. These island groups were all populated by different racial stocks speaking different languages. The movements from archipelago to archipelago were made on the larger ships and between the islands of the group in small crafts, except in the Hawaiian Islands where an aeroplane was used.

These studies involved a physical examination of the mouth of each individual to determine the extent of dental caries. Detailed data were recorded regarding the state of eruption of the teeth,

the shape of the dental arches, individual physical characteristics and age, together with information regarding the nutrition both at present and in the past. We were assisted in this matter in each group by special guides and interpreters that were usually obtained through government officials and arrangements for whom had been largely made through correspondence in advance. The inhabitants of New Caledonia and Fiji Islands were of Melanesian stock. The Tongans were probably originally a mixture of the Melanesians and Polynesians. The balance of the above island groups were inhabited by Polynesians.

The incidence of dental caries among those Melanesians who are still so isolated as to be compelled to depend upon their efficient native foods, was 0.38 per cent. of the teeth studied. For those individuals living on the trade or imported foods of modern civilization 29.0 per cent. of teeth studied had been attacked by dental caries. For the isolated Polynesians living quite exclusively on their native foods the incidence of dental caries was 0.32 per cent. of the total teeth examined. For the Polynesians living on trade or imported foods of modern civilization 21.9 per cent. of the teeth had been attacked by dental caries. The similarity of the figures was directly related to the similarity of the native foods and uniformity of the displacing imported foods.

While dental caries is recognized as the most universal affliction which accompanies civilization and is, as we have shown, a direct expression and effect of nutritional stress, it can now be shown to constitute or represent only one of many injurious effects or expressions of faulty nutrition. Rickets of childhood has long

been recognized as one of these. Several affections or so-called diseases of modern civilization are progressively on the increase. Others are particularly destructive for certain groups. Others chiefly maim and produce deformities in various parts of the body, such as the face and dental arches.

FACIAL IRREGULARITIES.

Facial and dental irregularities have been chiefly ascribed to thumb and finger sucking and to mixed racial physical characteristics. In my investigations of primitive racial stocks and of the effects produced by their displacing of part of their natural foods with foods of modern civilization, it has been disclosed that the rigid conformity to physical type characteristic of these races has been lost in a single generation as an effect of nutrition on development processes during prenatal and postnatal life.

For the face this may express itself as retarded growth of either the middle third or lower third or both. This directly affects the arrangement of the teeth in the dental arches as well as the interrelation of the dental arches. It occurred in as high a percentage of full bloods in the first generation after adopting the nutrition of modern civilization as in the mixed bloods. This deficiency was also found to have an expression in many other structures of the body.

As I have shown in my reports, the dental arches of the children and adults of the high Alpine valleys⁹ were universally regular in contour and proportion. In St. Moritz at the same altitude, but where the children had been reared on modern foods, irregularities of the dental arches were common and when we came down to the plains country the assortment of

deformities and of irregularities of facial development became very frequent and included many mouth breathers and badly proportioned features. The pure Swiss of the latter group had lost the physical characteristics which constituted the racial pattern in the isolated valleys. These physical changes accompanied the loss of immunity to dental caries. The nutrition of the isolated groups was largely limited to the native foods, rye and dairy products. At the point of contact with civilization and in all the modernized groups the white flour, sugar products, canned fruits, as marmalades, pastries, etc., displaced the natural foods.

Similarly in the Outer Hebrides in all the groups whose isolation provided as their nutrition oat products and sea foods, excellent facial and dental arch development were constant characteristics. In the first generation, however, after these native foods had been supplanted by the imported white flour and sweet goods, mouth breathers were common and marked deformities of the dental arches developed. I have shown, for example,¹⁰ a group of four children in one family all of whom were mouth breathers and all had dental caries. All were using imported foods.

Among the primitive Eskimos of Alaska who were living entirely on their native foods, chiefly of the large animal life of the sea, not a single case of irregularities of the dental arches nor a single mouth breather was found. In the present generation, however, where the mother had used the trade foods, white flour and sugar, largely for her nutrition during the gestation and lactation periods and those foods were used also by the growing children, irregularities of the dental arches and face were a frequent occur-

rence and often in very severe form.

Similarly, my studies of the Indians of the far north of Canada revealed dental arches of very remarkable perfection so long as the individuals had, during their developmental and growth periods, lived entirely on the native foods, consisting of the animal life of the land with a constant use of the organs. Again at the point of contact with modern civilization's foods, the first generation showed very marked divergence from the normal racial type, in that dental arches were irregular, nostrils were narrow and gross facial deformities often occurred. The activity of the dental caries process in this group was very marked, though the extent of the facial irregularity did not have a constant relationship with the loss of immunity to dental caries. These two factors were clearly related to two different growth periods.

My studies during the summer of 1934 among the primitive people of the South Sea Islands have again revealed information of a most striking character in this matter of the development of facial deformities with a change from the native to the trade foods. It is exceedingly significant that not one single case was found of deformed dental arches among the isolated groups on the eight archipelagos studied. In one case a supernumerary was found which produced crowding but the arch was of normal size. In each archipelago, however, where the children had developed on the trade foods, many cases of gross irregularity of the dental arches were apparent.

Many score of these cases have been photographed and several reported for these various racial stocks.

If the physical injury arising from faulty nutrition in the formative and

growth periods was limited to the oral and facial deformity, or even these and the serious obstruction of the air passages due to their lack of normal development, this would indeed be a very severe affliction; but another very important discovery has been made in these special field studies.

IMMUNITY TO DEGENERATIVE PROCESSES

In all the racial groups where a comparison could be made of the individuals still using the native foods and those living on the imported foods of modern civilization, the opportunity has been presented for a study, at the same time, of the level of immunity to several other degenerative processes, including arthritis and tuberculosis. It is commonly considered that tuberculosis is essentially an infective process, and much emphasis has been put upon the absence of exposure to the infection and the need for freedom from contact. It is of great importance that we shall keep in mind that practically all of these racial groups break down rapidly when they come in contact with our modern civilization and its foods. Among these destructive diseases, tuberculosis plays a very important role. The rapid breakdown of these primitive races with tuberculosis has been largely ascribed to the fact that there had not been an inherited immunity due to both a previous racial exposure and successful combat.

I have been deeply interested in studying the individuals who are making a poor fight against tuberculosis among these primitive racial stocks such as have been carried into institutions for care and nursing. At Juneau, Alaska, there is an excellent government hospital maintained for this purpose. Every one of the Eskimo and Indian boys and girls who were in

that institution suffering from pulmonary tuberculosis had very marked deformity of the dental arches with irregularity of the teeth. Similarly, in the tuberculosis hospitals of Hilo and Honolulu in the Hawaiian Islands only one individual between ten and thirty was found who did not have this marked evidence of nutritional deficiency in the development and early growth period. That individual was suffering from tuberculosis of the cervical glands.

INTERPRETATION.

My interpretation of the significance of this finding is that the defensive mechanisms of the body did not develop normally as a result of the same deficiencies which produced the disturbance in physical growth.

A recent survey of the Eskimos of Alaska by Dr. V. E. Levine and Professor C. W. Bauer of Creighton University (Nebraska) has been reported as follows:

"Cordova, Alaska, Oct. 26, 1934.—

Due to susceptibility to tuberculosis and other diseases the average life span of the Eskimo of Alaska is only 20 years and their race is doomed to extinction within a few generations unless modern medical science comes to their aid."

What is happening to the Eskimos is happening to the Indians at practically all points of contact with our modern civilization and its foods. It is also very significant that in my field studies among the Indians in northwest Canada that while I did not see a single arthritic cripple in the isolated groups in the far north, I found ten bedridden cripples, mostly arthritics in Telegraph Creek and vicinity at the point of contact with modern foods.

Since these degenerative processes are so definitely on the increase at the point of contact of these several primitive racial stocks with modern civilizations often where no other change has taken place except the displacement of part of the native foods with imported foods, it becomes very important to study critically the chemical characteristics of both the native dietaries and those foods which have displaced them.

Large numbers of samples of foods have been collected in my various expeditions and transported to my laboratory for chemical analysis.

The requirements of the normal human for two of the several requisite minerals, namely, calcium and phosphorus, have been shown by Sherman¹¹ to be approximately two grams of each in suitable chemical form in the daily diet, in order that the body may obtain at least one gram to 1.3 grams of each per day, which can only be accomplished when there is present an adequate quantity of the various vitamins, particularly the fat-soluble vitamins. The minerals can never be entirely removed. The following minerals were routinely determined, calcium, phosphorus, iron, magnesium, copper and iodine.

The quantity of Ca and P found from a study of the diets of both the immunes and susceptibles in Switzerland,⁹ shows a marked reduction in several minerals as provided in the normal daily diet, consisting chiefly of entire rye and dairy products in comparison with the displacing diets obtained from modern civilization. This decrease was from 1.6 to 0.4 grams for calcium, from 1.8 to 0.8 for phosphorus and from + + + for fat-soluble activators to + on a basis of 2,000 calories. This amounts to a reduction of

73.4 per cent. for calcium, 55.4 per cent. for phosphorus and 67 per cent. reduction for the fat-soluble activators.

For the Outer Hebrides when their native foods, which consisted chiefly of oats and sea foods, were displaced with the diet used by modern civilization, there was a reduction⁹ from 1.7 to 0.8 grams for calcium, from 3.04 to 1.3 grams for phosphorus and from + + + to + for fat-soluble activators, a reduction of 52.3 per cent. for calcium, 57.2 per cent. for phosphorus and 67 per cent. for fat-soluble activators on a basis of 2,000 calories daily.

When the native diets of the Eskimos are changed from the animal life of the sea to those used by modern civilization, there is a reduction from 2.14 to 0.39 grams for calcium, from 5.70 to 1.14 grams for phosphorus, from 0.100 to 0.067 grams for iron, from 1.27 to 0.16 grams for magnesium, from 0.0312 to 0.0167 grams for copper, from 0.000131 grams for iodine to 0.00000276 grams and from + + + to + for fat-soluble vitamins or a reduction of 81.8 per cent. for calcium, 80 per cent. for phosphorus, 30 per cent. for iron, 86.6 per cent. for magnesium, 46.6 per cent. for copper, 97.8 per cent. for iodine and approximately 67 per cent. for fat-soluble activators on the basis of 3,000 calories for their severe climate.¹²

For the Indians of northern Canada the loss of immunity when their normal diet, consisting chiefly of wild animal life of the land, was displaced with diets as used by modern civilization, the reduction was from¹² 2.3 to 0.39 for calcium, from 6.61 to 1.14 for phosphorus, from 0.186 to 0.067 for iron, from 0.68 to 0.16 grams for magnesium, from 0.0254 to 0.0167 grams for copper, from 0.0000240

to 0.00000276 grams for iodine and from + + + to + for fat-soluble activators on a basis of 3,000 calories. This is a reduction of 83 per cent. for calcium, 82.7 per cent. for phosphorus, 63.9 per cent. for iron, 76.4 per cent. for magnesium, 34.0 per cent. for copper, 88.5 per cent. for iodine and approximately 67 per cent. for fat-soluble activators.

When the foods constituting the diet of the South Sea Islands have been analyzed and the data expressed quantitatively for the various minerals it is disclosed that the diets of the isolated primitives provided them 1.9 grams of calcium per day and the modernized diets provided 0.97 grams, which is a reduction of 53 per cent. When the native foods were displaced by modern foods there was a reduction in the phosphorus from 3.10 grams to 1.36, or a reduction of 56 per cent. There was a marked reduction in the fat-soluble activators in the modernized foods, being + + + in the native foods and + in the modernized foods, a reduction approximately of 67 per cent. The primitive foods in the South Sea Islands consisted of various plants as taro, yams, maniota, sweet potatoes, bread fruit, chiefly taro; the young tops of the taro, many fruits including bananas, oranges, coconuts and papaya. With these were used animal life of the sea as shellfish, soft and hard such as crayfish, octopus, lobsters, oysters, and clams, also fish of many kinds both large and small, and turtles.

In general the usual contact with the outside world was through the calling of a small trade ship which gathered up the collected shells and dried coconut or copra. In nearly every instance the collected materials were paid for in goods which consisted of approximately 90 per

cent. white flour and sugar and 10 per cent. clothing. These trade ships usually call about twice or three times a year, and due to the coral reefs surrounding nearly all of the Pacific Islands, their only point of contact with the inhabitants would be at the few openings through the reefs. There is usually one principal port for each of the various archipelagos at which the larger merchant and passenger ships can call. At this port local trade stores are established which maintain the supply of trade goods for the continued use of the purchasers. Many groups were studied who had no contact with even trade ships.

Other remnants of primitive racial stocks have been and are being studied. The data for these are not yet consolidated.

It is very important to note that the building blocks from which our bodies are constructed, including all those forms of animal life having skeletons, are precisely those which we found to be present in liberal amounts in the native dietaries of those individuals in all the various groups with a high immunity to dental caries, but not present in adequate amounts in the nutritions of all of those with a low immunity to dental caries. If it be true that it is the absence of these minerals and activating substances which constitute the controlling factors for excellent physical development and the maintenance of high immunity to dental caries, then the providing of an adequate reinforcement to deficient dietaries should result in the effective control of the active caries process, and provide for normal physical development including the mechanisms of defense against infection.

Fortunately, we have a large fund of data dealing with these points. In all

the isolated racial groups studied, individuals were found who had left the isolated districts for a period of time and had gone to more modernized communities and then returned to their former environment. When this contact with modern civilization and its foods lasted from six months to a year, dental caries became active and injured or destroyed several teeth. If these teeth became abscessed or seriously painful while in the modernized community they were extracted. On return to their original living conditions the caries ceased to be active and remained so. The surfaces of the cavities became hard and glistening, indicating a high degree of remineralization of the decalcified dentine and a high immunity to dental caries. These cases were frequently encountered in the Alps in Switzerland and the Outer Hebrides and among the Indians in northern and central Canada.

Another type of condition was particularly instructive which was found in several places in the South Sea Islands. When the price of dried coconut or copra was high the trade ships were active and made frequent calls gathering up this material for European and American markets. Since the material was paid for almost entirely with white flour and sugar products, these low mineral and high calories foods became available for displacing the native foods. This was the condition for a few years following the War. For several years just past, however, the price of copra has been so low that the trade ships have not called and in many places the people have been for several years without the imported foods. The effect was clearly demonstrated in the condition of the teeth. When examined practically all mouths were free from ac-

tive caries. Large numbers of them had cavities with glistening hard surfaces where the tooth decay had become entirely arrested and these cavities were reported to have developed entirely during the periods that were covered by the exchange of the copra for the trade foods.

Still another type of condition was very instructive. There have been a few very severe hurricanes within recent years that have caused great damage in some of the Pacific Islands. When these occur practically all vegetation is stripped of its leaves, and fruits and plant foods are destroyed for an extended period. Relief is provided by the Red Cross in the form of modern trade foods. In several districts periods of active tooth decay could be identified as coincident with the period in which the Red Cross foods were available.

If it be true that the level of immunity to tooth decay is directly a problem of the level of the intake of body building materials, especially the minerals and fat-soluble activators, an adequate reinforcement of any deficient diet with those substances in suitable form for becoming available should provide the requisites for establishing and maintaining immunity almost regardless of the basic diet. The accumulating evidence strongly emphasizes the view that it is not what has been eaten that has done the harm, but rather the absence of what was not eaten, and that poor foods high in calories therefore satisfying hunger and energy demands, but low in body building material, had displaced or supplanted foods providing both. A logical procedure, therefore, is to obtain data on the results produced by reinforcing an inadequate dietary. It is at this point that the available evidence becomes very convincing.

Some Phases of Preventive Dentistry

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(To be Concluded in the June Journal)

OUR PRESIDENT ADDRESSES THE DENTAL BOARDS OF CANADA RE AN EMERGENCY

April 10th, 1935.

The Secretary,
College of Dental Surgeons,

Dear Doctor:

After consultation with the members of the executive of the Canadian Dental Association, I am officially bringing to the notice of your body the situation in which British Columbia's College of Dental Surgeons finds itself. It is unnecessary to go into details, but the outstanding points are as follows:

They are facing an appeal to the Supreme Court of Canada, which is expected to cost them approximately \$1700. Having spent \$2500 already in connection with the same case, their treasury is practically depleted. If this case is not appealed and won, it leaves Dental Laboratories in a position to practise prosthetic dentistry unhampered by dental laws. You can readily see that a condition such as this being allowed to exist in British Columbia would very soon be quoted as a precedent and would affect any one of our provinces.

The Canadian Dental Association is rendering all the moral assistance which it can, but owing to our very limited financial position, we are unable to assist in that direction. However, we are formally bringing this matter to the various provincial Boards for their serious consideration, and asking them to render what financial assistance they can, as well as their moral support to British Columbia in her hour of trial. We hope that our Canadian Dental Association may, in the near future, receive more adequate financial support and thus be able to step into the breach as a national body in such a situation as this.

Would you be good enough to bring this to the attention of your association as soon as possible and if you can see your way clear to render assistance kindly communicate direct with Dr. W. J. Lea, Secretary, British Columbia College of Dental Surgeons, 1520 Medical-Dental Building, Vancouver, B. C.

Yours sincerely,

G. L. CAMERON,

President, C.D.A.

LET US THINK NATIONALLY

By JOHN S. LAPP, D.D.S., Toronto, Ontario

WE, THE dentists of Canada, occupy a strategic position, in the battlefield of the constant war against the greatest of all invading armies, that vast and formidable bacterial horde which manifests itself in the form of sickness and disease.

This great silent army advances both by day and night and knows no provincial boundary lines.

The dental profession has, in recent years, attained a position in the front lines, shoulder to shoulder with our medical confrères against this common enemy, and is today accepted as an integral part of all important major health programs.

When one considers, for a time, the importance of our position in the health program of this great Dominion, it becomes more and more apparent that we should be thinking and acting in a more national sense than we have been accustomed to in the past.

The spirit of provincialism that seems to have our profession so tightly in its grasp, is undoubtedly a natural outcome of the present plan of provincial licensing under which, we must, of necessity, set up distinct provincial boundary lines.

It is true that we have had a Canadian Dental Association functioning for years, but even under the leadership of some of the best men in the Dominion, this

association has not been able to break down the barriers of provincialism to a satisfactory degree.

We have been passing through trying times during the past five years and many of us have learned that combined action on a combined front is necessary to accomplish results in any dental activity. This combined action becomes more effective as it becomes more national in scope. It is the opinion of some of the political leaders of Canada that certain health measures should be placed on a more national basis; in fact, we understand that in the near future, a conference of provincial ministers of health, meeting with the minister of National Health in Ottawa, will discuss the whole problem of National Health.

The matter of Health Insurance in Canada is a very live issue at the moment. The lack of opposition to the unemployment insurance legislation at the present session in Ottawa is some indication of the present trend towards social legislation in Canada, and by all indications we may expect social health legislation in the very near future.

The Canadian Dental Association has given this matter considerable study, and has at present a state dentistry committee, which is quite active and is keeping in very close contact with the situation. The personnel of this committee is as follows:

Chairman—Dr. J. S. Lapp.....	1 Bellefair Ave., Toronto
Secretary—Dr. F. J. Conboy.....	86 Bloor St. W., Toronto
Treasurer—Dr. E. C. Veitch.....	2 College St., Toronto
Executive—J. C. Devitt.....	Bowmanville, Ont.
Arthur W. Ellis.....	Toronto, Ont.
E. T. Guest.....	Toronto, Ont.
Andrew J. McDonagh.....	Toronto, Ont.
W. Cecil Trotter.....	Toronto, Ont.
E. C. Veitch.....	Toronto, Ont.

Provincial Representatives:—

Dr. E. Fraser Allen.....	925 Georgia St. W., Vancouver, B.C.
Dr. F. Boyaner.....	63 King St., Saint John, N.B.
Dr. R. R. Dalglish.....	Charlotte St., Sydney, N.S.
Dr. J. C. Flanagan.....	1224 St. Catherine St. W., Montreal
Dr. Harold Johnson.....	Scalb Bldg., Moose Jaw, Sask.
Dr. V. H. Macaulay.....	209 Eighth Ave. W., Calgary, Alta.
Dr. A. Mc Murdo.....	Summerside, P.E.I.
Dr. H. J. Merkeley.....	611 Medical Arts Bldg., Winnipeg, Man.

The question of Socialized Dentistry in Canada, should be a matter of study for every man practising in this Dominion.

Dentists either individually or in groups should discuss this question with their provincial representative and he in turn will pass on helpful suggestions to the secretary or chairman.

The executive of the committee on State Dentistry has the situation well in hand at present, and would welcome suggestions through the provincial representatives.

Let us all work together and in matters of national importance put up a solid national front.

ONTARIO DENTAL ASSOCIATION CONVENTION PROGRAM

MAY 20, 21, 22, 1935

ESSAYISTS:

DR. RALPH PEMBERTON, of Philadelphia, on "Arthritis" covering focal infection, diet and all other factors. He is an author and an outstanding authority in his field.

DR. C. E. STAFNE, of the Mayo Clinic, Rochester, Minn., authority on x-ray and other subjects.

DR. IRVIN H. ANTE, Toronto, on "The Fundamental Principles of Partial Prosthesis".

DR. J. H. JOHNSON, Faculty of Dentistry, University of Toronto, on "Exodontia".

DR. J. WRIGHT BEACH, Buffalo, N.Y., on "Wrought Clasps and Associated Devices for Retention".

OTHER SPEAKERS:

Hon. Mitchell Hepburn, Premier of Ontario.

Hon. Dr. J. A. Faulkner, Minister of Health, Province of Ontario.

Mayor James Simpson (Toronto).

Dr. T. C. Routley, Secretary, Canadian and Ontario Medical Associations.

GROUP CLINICS:

Dr. C. E. Stafne, Mayo Clinic.

Dr. J. Wright Beach)

Dr. F. H. Underwood)

of Buffalo.

"Wrought Clasps and Associated Devices for Retention".

Ottawa Dental Society . . . X-Ray.

Dental Division, . . . *Children's Dentistry.*

Board of Health, Hamilton.

Dr. J. N. Stewart, Hamilton. *Beauty in Dentistry (Natural and Artificial).*

Dr. W. K. Prendergast, . . . *Phonetics and Speech Defects in Prosthetic Dentistry.*

Dr. Andrew J. McDonagh, . . . *Periclasia.*

Toronto . . .

Dr. T. L. Marsh, Toronto. . . *Diet.*

Dr. O. Spence Clappison, . . . *Crown and Bridge.*

Toronto . . .

Dr. Frank Martin, Toronto. . . *Immediate Denture Construction including surgery.*

Dr. J. Fred M. Kennedy. . . *Exodontia.*

The Journal of The Canadian Dental Association

Dr. Gordon Frawley, Toronto. *Exodontia.*
 Dr. A. E. Higgins, Toronto. *Education and Re-education of Patients.*
 Dr. Fulton Risdon, Toronto. *Surgery Clinic at Hospital.*
 Dr. Samuel W. Leslie, Toronto. *Surgical Treatment of Infection and Devitalized Teeth.*

Dr. G. E. French, Niagara Falls. *"Health, Dentistry and Diet".*

Toronto Orthodontic Club. *"Orthodontia by the General Practitioner".*

Toronto East Dental Society. *"Full Denture Construction".*

Dr. Harold W. Hoag
 Dr. R. W. Hoffman
 Dr. E. G. Hargreaves
 Dr. R. R. Butler
 Dr. Helen Manchester

Faculty of Dentistry,
 University of Toronto

Clinician: Dr. A. D. A. Mason. *"Diagnosis" (with patient)*
"Fractures" and "Cleft Palate Obturators".

Clinician: Dr. L. F. Krueger. *"Root Canal Therapy".*

Clinicians: Dr. J. M. Sheldon
 and *"Inlays".*

Dr. G. V. Morton

Clinicians: Dr. J. H. Duff
 and *"Impressions" (partial).*

Dr. W. G. Switzer

Clinicians: Dr. Irvin H. Ante,
 Dr. F. M. Lott. *"Partial Denture Design".*

and
 Dr. R. J. Godfrey

A large number have volunteered to give table clinics and demonstrations and to take charge of question tables.

Exhibitors' demonstrations and suitable entertainment have been arranged.

DENTISTS FROM OTHER PROVINCES WILL BE WELCOMED AS GUESTS.

DENTAL CONVENTIONS

ONTARIO DENTAL ASSOCIATION, May 20-22, in Toronto.

WESTERN CANADA DENTAL SOCIETY, June 3-5, in Calgary.

AMERICAN DENTAL SOCIETY OF EUROPE, July 31-Aug. 3, in London.

MONTREAL FALL CLINIC, October 17-19, in Montreal.

AMERICAN ACADEMY OF PERIODONTOLOGY, Oct. 31-Nov. 2, in
 New Orleans, La.

AMERICAN DENTAL ASSOCIATION, November 4-8, in New Orleans, La.

IT AFFORDS us much pleasure to introduce to our Canadian readers the immediate past-president of the American Academy of Periodontology.

By . . .

M. MONTE BETTMAN, D.M.D., Portland, Oregon*

VINCENT'S INFECTION

LIKE many other periodontal lesions, Vincent's infection has had many names. The most common are rhagedenic gingivitis, acute ulcerous gingivitis, ulcero membranous gingivitis and trench mouth, the latter name originating during the World War when the disease became very prevalent among the soldiers in the trenches. Contrary to common opinion the disease did not originate during the War, although it probably reached its maximum importance at that time. Due to its highly contagious nature and the fact that the soldiers were thrown closely in contact with each other and to the unsanitary conditions to which they were exposed, many were afflicted.

The disease was reported by Miller in Germany in 1883 and by Vincent of France in 1898, since which time it has been known as Vincent's infection when occurring in the gingival area and Vincent's angina when occurring in the

throat. Both infection of the throat and gingiva may occur simultaneously or the infection may be only in one location, the most common being in the gingival tissue.

Vincent's infection may be associated with a chronic gingivitis, a periodontoclasia or it may occur pure. It is characterized by a more or less sudden onset, a necrotic sloughing of the gingival tissue, a fetid breath which is always characteristic, and bleeding on the slightest touch. In severe cases malaise, loss of appetite, a slight rise in temperature and sometimes an exanthematous eruption are present.

Hirschfeld has classified the disease into two main types—the destructive and the hypertrophic. In the first type he gives the outstanding clinical symptoms as ulceration and sloughing of the marginal gingivæ, especially inter-proximally, the necrotic layer being yellowish white, or grayish white, which may be easily wiped off its highly inflamed base, leaving a freely bleeding surface. For the second type he gives the subjective and objective symptoms the same as in the first type, but there is a marked acute gingival hypertrophy with or without necrosis.

* Dr. Bettman is chairman of the Council of the American Academy of Periodontology and honorary member of the California Academy of Periodontology. He was chairman of the periodontia section of the A.D.A. during 1932-1934, and has the distinction of having been the first dentist to specialize in periodontia in the Pacific Northwest (1905).



M. MONTE BETTMAN

sils have been removed. In my many years of practice I cannot recall having seen a case of Vincent's disease in a mouth in which the tissues have been kept in a high state of health—that is, where there does not exist some form of lowered resistance in the gingival tissue. In my opinion the organisms, even though introduced into such a mouth, would probably not produce the disease. Should any one part be kept unclean or be constantly irritated by overhanging fillings, deposits, etc., that location will be the first point to be attacked.

The most common sites of a primary infection of the disease are in the interdental spaces and the retromolar flap, although it may occur on any part of the marginal gingivæ and in widely separated areas.

DIAGNOSIS.

The acute stage of the disease is easily diagnosed. Its chief symptoms are a grayish-white slough along the border of the involved gingivæ, which when wiped off leaves a raw bleeding surface, and a characteristic odour which when once noted is never forgotten. As previously stated there is also pain, tendency to hemorrhage, bad taste, malaise and often temperature present.

The organisms thought to be responsible for the disease are the bacillus fusiformis and the treponema vincenti. It is now admitted by most authorities that these organisms can be found in almost every mouth and that bacterial findings either positive or negative, are not an absolute guide in diagnosis. Frequently Vincent's organisms are found in quantities in mouths which show no clinical symptoms of the disease. The organisms while widely prevalent in the mouths of apparently healthy individuals, attack only tissues that have been weakened by some other agency. A mouth that has been well cared for and in which the tissue tone is high and in which there are no local irritated gingival areas is not apt to be invaded by Vincent's infection. Blood-good makes the interesting observation that never has Vincent's disease been reported in a patient whose teeth and ton-

A careful diagnosis should always be made and if the condition does not respond to treatment within a day or two a further attempt should be made in diagnosis. Occasionally cases have been treated as a Vincent's infection when other treatment should have been instituted. Merrifield reported a case "in which the gums of a girl of 14 years were engorged and swollen to the entire extent of both arches. It was thought that the patient had trench mouth, but she died ten days

later from onset of the first symptoms, of acute myelogenous leukemia."

Vincent's infection is very contagious and the patient should be cautioned against exposing others to the disease. The disease is spread by direct contact, such as kissing, the use of common drinking cups, dishes, bottles, etc.

TREATMENT.

The treatment consists in the reduction in the number of, or the entire elimination of, the infecting organisms and the elimination of all sources of irritation of the gingival tissue.

The organisms responsible for the disease being anærobic, drugs which liberate oxygen are the ones of choice. Numerous drugs have been used such as sodium perborate, peroxide of hydrogen, chromic acid, silver nitrate, trichloroacetic acid and aniline dyes, etc.

The medical man in the last few years has been attempting to treat the disease with intra-venous injections of neo-salvarsan with little or no attention given to the local treatment. This treatment while usually causing a subsidence of the acute symptoms will often not effect a cure and as a result we have many cases of sub-acute or chronic Vincent's infection. This method of treatment should be discouraged in favour of the proper handling by a competent dentist, for only by eliminating all local factors as well as the bacteriologic ones, can the mouth be restored to normal.

The treatment which I have found gives the quickest and most satisfactory results is as follows:—After making a positive diagnosis the teeth and gingivæ are scrubbed thoroughly with a cotton roll dipped in a mixture of tincture of green soap 1 part, hydrogen peroxide 2 parts,

water 3 parts. Then the interdental spaces are sprayed with a dilute solution of hydrogen peroxide and the mouth rinsed with water. All diseased areas are then treated with a 5 per cent. solution of chromic acid and immediately thereafter about a teaspoonful of hydrogen peroxide is put in the mouth and the patient instructed to close the lips, thus holding the acid and peroxide in contact with the tissues for a period of three minutes. The above treatment is repeated on the following day and again on the third day, after which a thorough, careful prophylaxis is given, removing all deposits, overhanging fillings, sharp edges of cavities and any other irritating factors present.

At the first visit the patient is given a solution of 1 to 2,000 mercury bichloride in hydrogen peroxide, and instructed to use same diluted with equal parts of water as a mouth wash every one or two hours. A small amount of sodium bicarbonate may be added to make an alkaline solution.

On the third visit instruction is given in the proper home care of the mouth and the necessity for maintaining oral hygiene by proper brushing is explained.

Smoking, especially cigarettes, should be discouraged during treatment, for it has been noted that a cure is retarded when tobacco is used. Attention should also be given to the diet.

Extractions or other operations about the oral cavity are contra-indicated during the acute stage and should be postponed until the disease is under control.

If properly handled Vincent's infection is usually easily cured and unless complicated with periodontoclasia the lost tissue is repaired to a surprising extent.

Mayer Building.

AMIDOPYRINE AND AGRANULOCYTOSIS A WARNING

By SAMUEL W. LESLIE, M.D., D.D.S., Toronto, Ontario

AMIDOPYRINE was first prepared and patented in Germany in 1897 under the name of "Pyramidon". It has been marketed by American Drug Manufacturers under the name of Amidopyrine for the past twelve years. Amidopyrine is marketed in combination with other drugs of the barbituric acid series, allonal (alurate plus amidopyrine), being the one chiefly detailed to dentists.

It is not intended here to enter into a discussion of the various factors which act as ætiological agents in the production of Agranulocytosis or Agranulocytic Angina, but to warn the dental profession against the uncontrolled use of amidopyrine, a drug which is widely used by dentists, and which many believe has caused this disease entity. There does however, appear to be much diversity of opinion amongst the medical profession as to whether or not amidopyrine or drugs of the barbituric acid series are a cause of this dread and fatal blood disease.

It is our intention to place before the dental profession a short résumé of opinions regarding amidopyrine held by various authorities on blood diseases and also to review a few of the authentic cases known in the medical literature of 1934.

It is of interest to the dental profession that since Schultz¹ in 1922 described this syndrome which he called Agranulocytosis and which is now known also under the name of Agranulocytic Angina and many other names, more authentic cases have been reported in the year 1934 than in all the years prior to this period. This disease is characterized by a diminution in the number of granular white blood cells or leukocytes, because of sup-

pression by some unknown factor of the bone marrow, wherein these leukocytes are produced. When the number of white blood cells drops to a very low level, life becomes untenable. So far no therapeutic agent is known which will definitely act as a cure, but I believe that there are a few cases on record in which the administration of Pentnucleotide has effected a cure when used in the early stages of the disease. X-ray therapy has also been found useful in the treatment of this disease.

Many theories have been evolved and much experimental work has been done in an attempt to work out the ætiological factors in this disease.

Much research work in an attempt to link up an organism with the production of granulopenia has been fruitless. Dennis² has been successful in proving that focal sepsis plays an important part in the production of Agranulocytosis but his conclusions are not decisive. Since focal sepsis of one type or another has existed since the beginning of time as far as human beings are concerned, how would he explain the sudden rise in incidence of this disease? Besides, his theory and conclusions do not explain the predominance of this disease entity in females.

The theory which is more generally accepted is, that some possible chemical agent taken into the system may affect the granulopoietic centres in the bone marrow in such a manner as to cause a depression in the production of the granular white blood cells or a Primary Agranulocytosis.

It is true that there are certain other pathologic conditions to which the human

body is heir which may cause a form of granulopenia, and these are known as Secondary Agranulocytosis. Kracke³ has put forth the theory that the primary Agranulocytosis is due to poisoning by drugs taken into the body which have the so-called benzene ring in their formula, amidopyrine being one of them. He has been successful in proving this both on experimental animals and in human beings. He observed that eight out of nine patients seen by him, suffering from Primary Agranulocytosis, had taken various drugs of this coal tar series prior to the onset of their illness.

It is only proper to state here that such an eminent authority on the blood as Schilling⁴ suggests that "since similar pictures may be obtained experimentally in Anaphylaxis, an anaphylactic condition instead of an individual disease is possible".

The drugs of the coal tar series with which the dentists are chiefly concerned are amidopyrine and drugs such as allonal, containing amidopyrine. The use of these drugs is greatly on the increase. The dentists at first realized that they were very useful in the relieving of pain in pulpitis, post-extraction pain, neuralgia and other painful states and they prescribed these tablets. The patients soon observed that they also alleviated headaches, insomnia, backache, etc., and the increase in the consumption of these drugs followed, since they are obtainable from any drug store without prescription.

With this increase in the use of amidopyrine or amidopyrine compounds, there followed an increase in the incidence of Agranulocytic Angina.

Up until 1927, Kastlin reviewed the medical literature and was able to find only about forty-five cases of the disease on record. In the seven years which

have elapsed since this report, there are now on record, over six hundred cases. This rapid increase coincides with the increased consumption of drugs containing amidopyrine and barbiturates.

Madison and Squier⁵ report fourteen cases in which there is no doubt that the entire syndrome complex was due to the intake of amidopyrine or allonal. In six of these cases the continued use of these drugs for the alleviation of pain resulted in 100 per cent. mortality. In the other group of eight cases where the drugs were withheld and other sedatives used for the relief of pain, there was 100 per cent. recovery. It is of interest to note, however, that in one case of the latter series, a resumption in the use of amytal with amidopyrine for the relief of arthritic pain caused a recurrence of the Agranulocytosis.

Randall⁶ presents an interesting case of Agranulocytosis developing in a female physician following the intake of large doses of luminal and amidopyrine for the relief of headache. In this case he also made a very careful search for any possible allergic factor which the patient may have had to drugs and he was unable to find any.

Hoffman, Butt and Hickey⁷ in attempting to find the ætiology of Agranulocytosis or Neutropenia reviewed twelve cases which had been under their care. They were astonished to note that the *only common factor* in all their histories was the intake of amidopyrine. They conclude that all patients using amidopyrine alone or in combination with barbiturates such as allonal, luminal, and others should have leukocyte count done "several times a week".

That the danger of these drugs has not only been observed on the North Ameri-

can continent but also abroad is noticed in a review by Holten⁸ and his associates, of five fatal cases all in women during a period of one and a half years. These patients were all hospitalized for other ailments, not one of them having Agranulocytosis on admission. All five cases, however, had treatment with amidopyrine with the resultant development of Agranulocytosis which terminated fatally.

Groen and Gelderman⁹ observed this Agranulocytotic syndrome following the use of amidopyrine and antipyrine. They maintain, however, that it is probably restricted to certain individuals who may be hypersensitive to the drugs or are allergic, but they conclude that there is no doubt that a toxic ætiology of Agranulocytosis appears to be the rule not the exception. Six fatal cases reported by Plum¹⁰ occurred after therapeutic use of amidopyrine. The report by Rawls¹¹ of two cases is certainly very instructive.

Space does not permit the review of many more cases of such a type which have been reported, in the literature both from Europe and North America, proving beyond any shadow of doubt that Agranulocytosis with its subsequent fatal termination, does result from the continued use of amidopyrine by itself or in combination with barbiturates.

That fatalities are reaching alarming proportions is further evidenced by the fact that the United States Department of Food and Drug Administration has seen fit to issue a warning to the public to be wary of the use of amidopyrine, which is frequently used in remedies advertised for the relief of rheumatism and neuralgia. The statement pointed out that the serious poisonous and destructive effect that the drug has on the white blood cells is insidious, and may be due to the

taking of even small doses over a long period of time.

The purpose of this article is purely to sound a warning note to the dental profession at large. In view of the facts as here outlined one feels that a definite curb on the indiscriminate use of amidopyrine and its related drugs should be placed by dentists, who as a class probably more often prescribe these drugs, or are instrumental in causing an enormous amount of these drugs to be consumed. There are many other drug substitutes which can be used in prescriptions for the relief of pain.

Time and further experimental work alone will solve the riddle as to the actual cause of Agranulocytosis, but until then, one feels that whether it is due to a bacterial, or a chemical, or to an allergic agent, a restricted use of amidopyrine will result in a drop in the incidence of this dread and fatal disease, known as Agranulocytic Angina.

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Amidopyrine and Agranulocytosis—A Warning

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¹⁰Plum, P.: Experimental Investigation of Amidopyrine as Cause of Agranulocytosis: Six New Fatal Cases. *J.A.M.A.* 103: 1263 (Oct. 20) 1934.

¹¹Rawls, W. B.: Case Report: Neutropenia Developing During Amidopyrine Medication; Two Cases. Address before the Clinical Society of the New York Polyclinic Medical School and Hospital, Feb. 5, 1934. (Reported in the *New York M. Week* 13: 6, Feb. 3, 1934.)

425 Bloor St. W.

INTERIM REPORT OF THE COMMITTEES ON LEGISLATION AND STATE DENTISTRY OF THE CANADIAN DENTAL ASSOCIATION

By FRED J. CONBOY, D.D.S., Toronto, Ontario

A DEPUTATION representing the Canadian Dental Association visited Ottawa and presented the views of the Legislation Committee of the organization with respect to the Mail Order Denture Business, Duties on Dental Supplies and Equipment, and Income Tax Returns, to the heads of the various departments. The delegation consisted of Dr. Walter G. Thompson, Director of Dental Services for Ontario, and Dr. Fred J. Conboy, Chairman of the Legislation Committee of the Canadian Dental Association. Dr. Ira W. Hamilton, of Ottawa, made the necessary appointments with the Government Departments, and the arrangements were entirely satisfactory. The presentations were the result of much careful study of the various questions made by the Executive of the Legislation Committee, composed of Drs. E. A. Grant, E. C. Veitch, R. G. McLean, Fred. J. Conboy, C. Angus Kennedy, T. E. C. Butler, A. D. A. Mason, Walter G. Thompson, W. H. Woodrow, and Douglas Coupland. The three dentists who are members of the House of Commons, Doctors O. B. Price, M.P., General J. S. Stewart, M.P., M. Duguay, M.P., assisted the delegation in every possible way, Doctor Price giving his entire afternoon to the task.

The results of the Conferences were most encouraging, and the Committee has high hopes that all the requests will ultimately be granted. The report is as follows:—

MAIL ORDER DENTURE BUSINESS.

The deputation requested that the use of the mails and express facilities be refused the Chicago Dental House, a firm operating from Chicago and engaged in supplying Canadian people with dentures, using a method by which the patient takes his own impression. The Committee had a long and satisfactory conference with Mr. T. P. Coolican, Deputy Postmaster General, and presented the following statement of facts and evidence:

First: The Company concerned advertises in Canadian publications that it can and will construct, satisfactorily, substitutes for natural teeth, at low cost, by a method in which the patient takes his own impression and bite and gives an idea of his size and complexion.

The Association submitted as EXHIBIT 1 an advertisement and literature, together with impression material.

Second: Except by the merest chance, it is impossible to make useful, reasonably æsthetic, non-irritating, non-deforming substitutes for natural teeth by this

method. The Canadian Dental Association, through its proper Committee, had an edentulous patient order such a service and follow the directions carefully. The result was a complete failure.

In support of this claim we submitted as EXHIBIT 2 statements from Faculties of Dentistry, of several Universities and other outstanding authorities in the field of Prosthetic Dentistry.

Third: This practice is detrimental to public health, as the plates, if worn, are low in masticating efficiency; the closing of the bite may lead to deafness, the irritation and tissue impingement to cancer, and the almost certain failure may discourage the patient from attempting to secure a proper dental service, including careful impression taking, a proper bite, scientific tooth arrangement, adjustment, re-education and supervision.

In support of this claim we submitted as EXHIBIT 3 a statement from the Deputy Minister of Health for Ontario.

Fourth: This type of practice is illegal in Canada. No layman can legally perform dental operations in this way. The Dominion Government, in a ruling some years ago, and the Courts on more than one occasion, ruled that the supplying of substitutes for natural teeth is a dental operation.

As proof of this contention we submitted as EXHIBIT 4 the letter from the Deputy Minister of Health, Ontario (Exhibit 3); a resolution from the Royal College of Dental Surgeons, Ontario, declaring the practice illegal in Ontario; a legal opinion from I. F. Hellmuth, Solicitor for the Royal College of Dental Surgeons, to the same effect; and similar evidence from Quebec and British Columbia; also a letter

from the Dominion Dental Council of Canada.

Fifth: It is unnecessary to stress that the practice of setting forth a claim to achieve something which men of knowledge know to be impossible, is itself fraudulent. Government and University action, setting up teaching facilities to train dentists to perform such services, is evidence that it cannot be done in a satisfactory manner by the untrained and by remote control methods. Canadian citizens defrauded or injured can secure no redress in this country.

Sixth: The practice is condemned by the Federal Trade Commission at Washington and the Chicago Business Bureau, as well as by the American Dental Association.

In support of this evidence we submitted as EXHIBIT 5 an Editorial from The Journal of the American Dental Association, January 1935 issue.

Seventh: The practice is unfair to the dentists of Canada and impinges upon their rights and privileges. It permits an alien firm to do what the laws of this country will not allow a Canadian to do. It gives a false impression of the service, knowledge and skill necessary for the proper construction of dentures and of the fee the dentist has a right to expect, and constitutes unfair competition from a source with no interest in this country, paying no taxes, with no office or overhead. Canadian dentists during the depression gave, and always have given, their services in a most altruistic manner for the public good, and it is unjust to allow this lay and foreign firm to affect our profession detrimentally.

Mr. Coolican was quite sympathetic, and explained that the use of the mails could only be refused on grounds of

fraud. He suggested that the evidence on this point be slightly strengthened, and promised a decision which the delegates feel will be favourable, as soon as this additional material is secured.

INCOME RETURNS

Mr. C. F. Elliott, the Income Tax Commissioner, has three brothers practising dentistry and was quite familiar with the professional activities of dentistry. He gave the Committee a very sympathetic hearing and acceded to the majority of our requests. The members of the profession will be furnished with a pamphlet setting forth in detail the allowances that may be made, and giving other useful information with respect to Income Returns. The Committee will have another conference with Mr. Elliott early next year, and at that time any suggestions sent to the Committee by members of the profession will be discussed with the Commissioner.

CHANGES IN TARIFF

Two conferences were held with Mr. Hugh Scully, Commissioner of Customs, one in Ottawa on Wednesday, February 6th, and another at Toronto the next day. At the second meeting the Committee had the assistance of Mr. Don Lawrie, representing the Dental Dealers of Canada. His extensive knowledge of tariffs proved most helpful. At each conference Mr. Scully was supported by members of his staff. The delegation requested that all materials and supplies used exclusively by dentists be classified as dental goods. At present many articles are placed in other categories, and usually in one carrying a high duty. That is, tooth polishers are classified as brushes, and other articles in accordance with the material of which they are made. If the request is granted it will mean a substantial saving to the dentists of Canada. Mr. Scully promised

immediate adjustment in some articles and the support of his department in an appeal to the Committee which will be made to the Minister of Finance for changes in the regulations. The deputation also requested the Commissioner to lend his support to an approach to the British Government through the Minister of Finance for Canada, to have the duty on Dental Equipment coming into Canada from the United States removed on such things as are not made in Canada or the United Kingdom, in a way to be acceptable to Canadian dentists. This request was freely granted, and we can rely upon Mr. Scully's support in our further efforts in this direction.

HEALTH INSURANCE.

The State Dentistry Committee, composed of Dr. J. S. Lapp, Chairman, and Doctors A. J. McDonagh, E. T. Guest, Arthur W. Ellis, W. Cecil Trotter, E. C. Veitch, and Fred. J. Conboy, of Toronto, and J. C. Devitt of Bowmanville, instructed the delegation while at Ottawa to confer with the Hon. Dr. D. M. Sutherland, Minister of Health, with respect to Health Insurance. Dr. O. B. Price, M.P., presented the deputation to Dr. Sutherland. The Honourable the Minister of Health was most cordial, and discussed the matter in a most frank and sympathetic manner. He stated that in his opinion some form of Health Insurance would surely come into effect in the near future, but that a Bill of this kind would not be introduced at this session of Parliament. BILL NO. 8, an Act to establish an employment and social insurance Commission, did, however, make provision for the securing of information on Health Insurance. The clauses of the Bill dealing with National Health are as follows:

The duties and powers of the Commission under this part of this Act shall be exercised, so far as may be found practicable and expedient, in co-operation with any department or departments of the Government of Canada, with the Dominion Council of Health, with any province or any number of provinces collectively, or with any municipality or any number of municipalities collectively, or with associations or corporations.

"It shall be the duty of the Commission:—

(a) to assemble reports, publications, information and data concerning any scheme or plan, whether a state, community, or other scheme or plan for any group or class of persons, and whether in operation or proposed, in Canada or elsewhere, of providing, on a collective or on a co-operative basis, by means of insurance or otherwise, for

(1) medical, dental and surgical care, including medicines, drugs, appliances, or hospitalization, or

(2) compensation for loss of earnings arising out of ill-health, accident or disease;

(b) to analyze and make available to any province, municipality, corporation or group of persons desiring to use the information so assembled for the purpose of providing such benefits or any of them; and

(c) as far as may be found practicable so to do, on request of any province, municipality, corporation or group of persons, to examine and report on any such scheme or plan proposed to be put into effect or in effect at the date of such request, as to afford technical and professional guidance in regard to the establishing, working or reorganization of the scheme or plan.

The Commission may from time to time submit to the Governor in Council proposals for co-operation by the Dominion in providing any of the benefits enumerated in paragraph (a) of the next preceding section of this Act for such action as the Governor in Council is authorized to take, and may undertake special investigations in regard thereto, subject to approval of the Governors in Council concerning the scope and nature of each such investigation."

The Honourable the Minister felt sure that the Commission, when set up, would consult the Canadian Dental Association with respect to those parts of the plan dealing with dentistry, and suggested the advisability of collaborating with medicine in the preparation of a plan that would be satisfactory to both professions. The frank and assuring statements of the Honourable Dr. Sutherland were most satisfactory.

Acting upon authority given by Dr. G. L. Cameron, President of the Canadian Dental Association, the deputation discussed with Dr. Stone, of the Department of Indian Affairs, fees paid for dental treatment given to the Indian population and the extension of the service. Dr. Stone is exceedingly anxious to provide as complete a dental service as can possibly be obtained for these our fellow-Canadians, and the support of the Canadian Dental Association was promised in the achievement of this worthy objective.

It is the purpose of the Legislation and State Dentistry Committees of the Canadian Dental Association to make regular contacts with the various departments at Ottawa and, in so far as they can, protect and advance the interests of the dental profession in Canada.

WESTERN CANADA DENTAL SOCIETY CONVENTION

CALGARY, JUNE 3-5



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UNSURPASSED LOCAL AND MOUNTAIN ATTRACTIONS



CITY
OF
CALGARY,
ALBERTA

HEALTH INSURANCE ACT FOR ALBERTA

By JOHN W. CLAY, D.D.S., Calgary, Alberta

IN the last few years a rapidly growing wave of socialistic ideas and legislation has been spreading over the world. In no part of Canada has the new trend of thought gained as much following as in the Province of Alberta.

The feeling has been growing that all residents of the Province are entitled to adequate health services. As a result, a considerable study of the problem of Health Insurance legislation has been carried on by the Legislature. The fruits of this study are to be seen in the bill on "Health Insurance" sponsored by the Minister of Health.

The Committee of the Legislature on Health Insurance, has recommended that the ultimate object should be, complete Health services to every person within the province.

The present bill is, to a considerable extent, modelled on the system in England, with one fundamental difference. The Province is to be divided into Districts, in each of which a vote will bring the Act into effect for all the residents of that District.

The wide extent of services to be rendered is shown by quoting section 37 of the Act: "Subject to the other provisions of this Act, every resident of a medical district, so long as he continues to be a resident thereof, shall be entitled to receive without charge to him the following benefits:

(a) Any necessary hospitalization of every description;

(b) Any necessary nursing services;

(c) Any necessary medical attention, advice and treatment;

(d) Any necessary surgical attention, advice and treatment;

(e) Any necessary dental attention, advice and treatment;

(f) Any necessary ophthalmic advice and treatment;

(g) The benefit of such laboratory services such as x-ray and biochemical services and such hospital facilities as may be requisite for the purpose of diagnosis;

(h) All such drugs, medical and surgical supplies and appliances, ophthalmic supplies as may be prescribed by the medical practitioner under whose care he is for the time being."

A Health Insurance Commission of three members appointed by the Lieutenant-Governor in Council, will control for the Province, and local bodies will control for each district. A professional board of reference of three, of which one will be appointed by the "profession or institution affected by or concerned in the question or dispute", will be appointed in case of disputes.

Finances are taken care of by an assessment as follows:

Municipality — \$11.28 per year for each resident.

Provincial Treasurer—\$3.22 per year for each resident.

Employed persons—\$2.01 per month.

Employers—81c per month for each employee.

Every income earner, not an employee —\$33.83 per year.

Casual Employment

Employers—One half cent per hour.

Employees—One cent per hour.

Sentiment favouring Health Insurance predominates in all four of the Western provinces. Great changes are upon us.

THE FORUM

DENTISTRY BY AIR

The Pas is a trading centre of about six thousand inhabitants, the gateway to northern Manitoba and northern Saskatchewan, located 485 miles north of Winnipeg. Port Churchill, the terminus of the Hudson's Bay Railroad, is on Hudson's Bay, 510 miles north of The Pas and approximately one thousand miles from Winnipeg. Chesterfield Inlet is 360 miles directly north of Port Churchill, and the only means of travel between the two points is by the occasional trading-boat in the summer and by dog-team in the winter, or at times by aeroplane.

Last November an employee of the Hudson's Bay Company at Chesterfield Inlet found that he required some dentures, and so sent a radio message to Churchill, giving directions as to dentures, and instructions to send same to Dr. Phin, a dentist at The Pas.

The Government Radio Station at Port Churchill sent the following letter to Dr. Phin:

"I am enclosing a message received three days ago from Chesterfield Inlet, and also a note from the radio station explaining the measurements, as taken by Dr. Livingstone who is medical officer there for the Dept. Interior.

"I hope that this will be sufficient data for you to go by, and if not, please let me know by mail and I will try to get further particulars."

The following is the radio message received at Port Churchill:

"Dr. Phin care Churchill Radio:

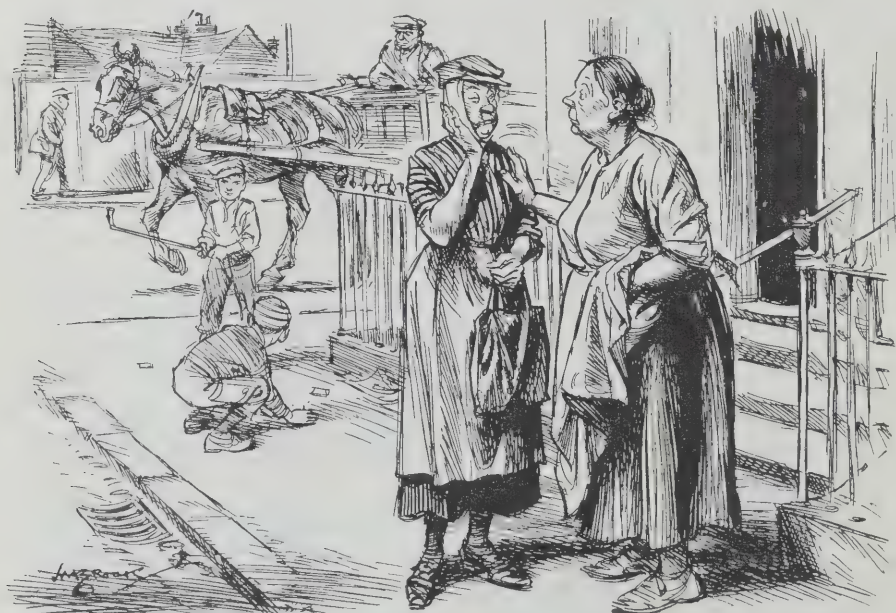
"Recently broke upper bridge now require temporary upper and lower plates stop enclosed find inside measurements my jaw as measured by Dr. Livingstone stop if further details required communicate radio station Churchill and forward plates there as soon as completed stop coming outside in March and will have you make permanent job if necessary stop will arrange payment through H B Co or will personally take care of matter when I pass thru."

The following are the directions and measurements sent by the radio station:

"Draw a line one and fifteen sixteenths inches long now from midpoint of this line CA and at right angles draw a line one and one half inches long call it BE. From A an angle 45 degrees a line two inches long call AF now from C and forty five degrees from B and C draw line two inches long call C and D. Drawing arc thru ADEFC you have an inside picture of Loftys mouth.

"A base AC midpoint B draw a line right angles to AC $1\frac{1}{2}$ inches long call it B and E. A and C is horizontal B and E vertical. Looking down on picture U have commencing from left A D E F C with base ABC the arc ADEFC is shape mans gums so if Doc makes plate and puts teeth on it Lofty will be able eat something besides sops."

A Dental Practice Without Using Dental Instruments is conducted by Dr. Harold F. Hawkins in Los Angeles. To call this method of practice unique would be to err by understatement. Dr. Hawkins, who recently visited New York, has an office without a dental chair, with no dental instruments, no x-ray machine. And yet he makes it pay. What he does have is chemical apparatus which he uses in analyzing the saliva and urine of patients referred to him by other dentists. On the basis of these analyses he recommends changes in diet with the objective of diminishing or preventing dental caries.—*From New York Journal of Dentistry.*



"WHATEVER YOU DO DON'T 'AVE GAS, DEARIE. MRS. WILKINS ACROSS THE WAY, SHE 'AD GAS UP AT THE 'OSPITAL FOR 'ER WISDOM-TOOTH, AND THEY TOOK 'ER TONSILS OUT."

(Reproduced by kind permission of the Proprietors of "Punch".)



PRINCE EDWARD ISLAND



W. T. Waye, Charlottetown

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

SASKATCHEWAN



F. C. Harwood, Moose Jaw

NOVA SCOTIA



A. W. Faulkner, Halifax

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

ALBERTA



John Clay, Calgary

NEW BRUNSWICK



J. F. Edgecombe, Saint John

MANITOBA



J. F. Morrison, Winnipeg

BRITISH COLUMBIA



J. S. Bricker, Vancouver

ECONOMIC SECURITY

The prolonged economic depression has focused the attention of all strata of society upon our social and economic structure. The spectre of insecurity has become a reality to an increasingly large number of our citizens. As a result of this unprecedented condition, there seems to be an almost general acceptance of the principle that the Government should pass legislation to provide a greater measure of economic security for all our people, by means of health insurance, unemployment insurance, old age pensions, etc.

At present the debate has shifted from one of whether the Government should act, to one of how the Government should act.

We, as dentists, are interested in the whole program, but the feature that gives us immediate concern is the problem of health insurance.

Health insurance cannot be defended upon the ground that many other countries have adopted this plan. On the other hand, we should approach this problem with great courage and intelligent honesty, and study every phase of it, recognizing the great social need and the responsibility of the State to care for it if that be possible. Then we can give direction to any plan that is advanced, in so far as dental service is concerned.

The medical profession has been very active in dealing with this situation.

The report of the committee on economics of the Canadian Medical Association, as presented at the annual meeting in 1934, is most comprehensive and deals very fully with a suggested plan for health insurance in Canada. The principles laid down that are of particular interest to our profession are these:

1. That the only benefit under the Plan be the medical benefit.
2. That every qualified licensed practitioner be eligible to practise under the Plan.
3. That insured persons have the freedom of choice of general practitioners.
4. That dental service be arranged direct with dentist, or upon reference.
5. Persons with dependents, having an income of less than \$2,500, and those without dependents, having an income of less than \$1,200, be compelled to contribute.
6. Premiums of indigents to be paid by the State.

At the annual meeting of the American Medical Association in 1934, the house of delegates devoted two sessions to the consideration of medical economic problems and laid down general principles that should be observed in the formulation of any plan to provide medical care for any group of individuals. The following conclusions are of interest to the dental profession:

1. All features of medical service should be under the control of the medical profession.
2. No third party must be permitted to come between the patient and his physician in any medical relation.
3. Patients must have absolute freedom in the choice of a qualified doctor who is willing to give service.
4. However the cost may be distributed, the immediate cost should be borne by the patient, if able to pay, at the time the service is rendered.
5. Medical service must have no connection with any cash benefits.
6. The service should be strictly limited to those below the "comfort level" of incomes.
7. There should be no restrictions on treatment or prescribing, formulated and enforced by the organized medical profession.

The January, 1935, Health Insurance Poll, conducted by the publishers of Oral Hygiene among the dentists of the United States, and summarized in the editorial section of the March issue of that magazine, reveals some interesting facts. The returns showed that 5,846 dentists or 9 per cent of the profession voted—11 to 3 favoured the principle of Health Insurance—80 to 1 favoured the inclusion of dental benefits under any Health Insurance scheme—a majority favoured making insurance available to those with yearly incomes below \$2,000—3 to 1 favoured adequate service rather than limited service—14 to 1 favoured including the family of the wage-earner in the benefits. Many expressions of opinion indicated that immediate action should be taken, that the service should be free from political domination, and that professional standards should be maintained.

In Great Britain, where health insurance has been in force for some years, a very interesting report was recently submitted by the Dental Insurance Acts Committee to the Representative Board. It was shown conclusively that examination at regular intervals, accompanied by early treatment, offers the best means of maintaining dental health. This being the case, the committee was of the strongest possible opinion that the maintenance of confidence between patient and dentist, which is so important, would best be secured by limiting, as far as possible, the interposition of third parties. The committee was also of the opinion that an itemized scale of fees for treatment was not in the best interests of the insured person, but that payment on a *per caput* basis and a panel system was the ideal arrangement. It was contended that this would encourage careful diagnosis and insure that maintenance of contact between patient and practitioner, so necessary to secure true prevention and maintain dental fitness.

In this issue of the Journal appears a splendid report by Dr. Fred J. Conboy, outlining among many other most valuable contributions to the dental profession of Canada, the recent interview held with the Honourable the Minister of Health at Ottawa. The committee was graciously received and was assured of hearty co-operation in dealing with health problems as they affect our profession.

At this time it is our duty to point out the intricacy and the urgency of the problem which confronts us. We do so because we believe that the best interests of our citizens as a whole, and the best interests of the profession of dentistry, can be most adequately served by making a thorough study of every ramification of this great problem; nor have we any intention of remaining spectators, as the proposed plan for the distribution of medical service is discussed. The dental profession is deeply interested.

As Dr. J. S. Lapp states in his timely message and appeal, also appearing in this issue, "combined action on a combined front is necessary to accomplish results in any dental activity". Dr. Lapp as chairman of our committee on State Dentistry, and his nation-wide committee, will be on guard to protect our interests at this most difficult time and can guide our efforts; but Canadian Dentistry will assume its rightful place in our national life, only, as the members at large support their leaders, with thought, study and co-operation.

Since Doctor Conboy's report was received, which report appears in this issue of the Journal, we have been advised that the Deputy Postmaster General has denied mailing facilities in Canada to the Chicago Dental House and the International Dental House, both of 1445 West Jackson Blvd., Chicago. We congratulate Doctor Conboy and his committee on securing this ruling and in rendering this service to the dental profession of Canada.

NEWS FROM THE PROVINCES

MANITOBA

Aiming to stop "Bootleg Dentistry" (the taking of impressions and making plates, etc., by laboratories, and others so engaged) the following was passed as an amendment to the constitution of the Winnipeg Dental Society:

"As a member of the Winnipeg Dental Society, I recognize, and acknowledge it to be my duty, to avoid giving my patronage or assistance to any mechanic, technician or laboratory, who or which has been convicted, and so recorded on the books of the Winnipeg Dental Society of any infringement of the Manitoba Dental Act.

"And I hereby agree that any continuation of my patronage to anyone so convicted, shall be just cause for my name to be struck from the membership roll of the Winnipeg Dental Society."

A copy of this amendment was forwarded to every practitioner in the province for his information, that he might be guided accordingly, and that he might aid in this effort to practise dentistry in the better interest of the public.

ONTARIO

The Kent County Dental Association has just completed a very successful season with Dr. George Mills, of Tilbury, as president. The association has added several new members this year and the attendance at all the meetings has been most gratifying to the officers in charge.

During the winter months five clinics were arranged as follows:

Nov. 1—Dr. O. C. Applegate, Detroit, table clinic on "Crown and Bridge" and a paper on "Progress in Restorative Procedure."

Dec. 13—Joint meeting with the Kent County Medical Society at St. Joseph's Hospital with Dr. Gordon C. Cameron, of Toronto, speaking on "Dental Infection in Relation to Systemic Infection" and "Vincent's Infection." This was a most interesting session which was thoroughly enjoyed by the large attendance of medical men and dentists from the city and surrounding towns.

Jan. 16—Dr. P. M. Kyprie, of Detroit, gave splendid afternoon and evening clinics. His

subject was, "Some Thoughts in Regard to Retention Forms of Inlays and Three-Quarter Crowns Used as Bridge Abutments in Fixed Bridgework." Over forty dentists, including visitors from Sarnia, London, Windsor, St. Thomas and Detroit, attended this meeting.

Feb. 20—Dr. J. H. Johnson, of Toronto, gave a practical clinic on "Exodontia and Anaesthesia" at the General Hospital, which also was largely attended and very much enjoyed by all.

Mar. 6—Dr. Philip Greaves, Toronto, gave a paper illustrated by lantern slides on "Anaesthesia" and on the following day conducted practical and very helpful clinics in local offices.

At the last meeting election of officers for 1935-36 was held with the following results: Past president, Dr. George Mills, Tilbury; president, Dr. D. L. Kinzie, Chatham; vice-president, Dr. R. C. McCutcheon, Highgate; secretary-treasurer, Dr. C. E. Higley, Chatham; councillors, Dr. M. J. Hooley, Ridgeway, and Dr. F. A. Weese, Wallaceburg.

At the February meeting of the London Dental Society, Dr. Frank Lott, of Toronto, gave a table clinic and short paper in the afternoon on "Investments and Casting" and in the evening presented the subject "Recent Developments in Tooth Forms of Artificial Posterior Teeth." Dr. Irwin Ante accompanied Dr. Lott from Toronto and was a very welcome guest at the meeting.

The Toronto Academy of Dentistry and the Montreal Clinic Club have for three successive years made a reciprocal exchange of essayists for one meeting on their year's program. This exchange has been conducive to a very fine fraternal feeling between these two societies. On March 18th Dr. D. P. Mowry, Professor of Periodontia, McGill University, came to Toronto to provide the program for the Toronto Academy. The paper was excellent, as one would expect from such a cultured and capable colleague. He was accompanied on this occasion by Dr. E. D. Bourke, president of the Montreal Clinic Club.

News from the Provinces

The spring biennial meeting of the Toronto Forum of Dental Economics proved to be intensely interesting and practical. President Dr. Russell Hoffman and his committee are to be commended for their arrangements and selection of speakers. The subject under discussion was "Collections." Papers were presented by Mr. J. H. Suydam, of Toronto Credits, and Miss Jessie M. Ritchie, secretary to Dr. John A. Bothwell. The speakers dealt with their subject in a comprehensive, concrete manner, and invoked discussion by Drs. L. F. Krueger, Harold Hoag and Gordon McLean, before quite a large group of members and their assistants. The central idea of the successful collection of accounts seemed to be a mutual understanding of the service to be performed and its financial obligation to the patient, by both parties, at the time diagnosis is made, and a definite agreement for settlement arranged in a friendly manner at the same time. There is much food for thought in this suggestion.

Dr. John T. Hanks, of New York, Dental Adviser to Mr. Herbert Hopkins, Chief of the Federal Emergency Relief Administration at Washington, was in Toronto on April 2nd. Dr. Hanks read a very timely and sane paper on Dental Health Insurance before the Academy of Dentistry. His message provoked quite considerable favourable comment from members and guests present. Dr. T. C. Routley of the Canadian Medical Association, Commissioner Laver of Department of Welfare, City of Toronto, Col. W. G. Thompson, Director of Dental Services of Province of Ontario, Dr. Gordon P. Jackson, Medical Officer of Health, of Toronto, were guests of the Academy during the evening. The meeting was in charge of Dr. Harold Skilling, Chairman of the Oral Hygiene Committee of the Toronto Academy, and it was a fitting climax to a most successful year under the presidency of Dr. Frank Martin.

Dr. Gordon P. Jackson, M.O.H. of Toronto, announced to the Academy of Dentistry that the City Council had voted funds to continue the public Dental Clinic at Spadina Ave. and Dundas St., in co-operation with the

Academy. Further, he intimated that the Council had agreed to spend \$9000 for denture service to indigent people in the private offices of dentists, the dentist being allowed \$15 per denture. Patients for dentures must apply to the dental officer in the public dental clinic, who will in their turn be sent to the dentist of their choice for this service. Toronto dentists are warned not to render denture service to anyone unless instructed by Dr. Reid, the clinic officer.

City Council further provides a fund of \$50 per month for repair to bridges, rebases and such other services as are not now being cared for under the Province of Ontario dental relief scheme. These services must be rendered only under instruction from Dr. Reid.

A letter under the signature of President-Elect Dr. W. J. Kerr of the Academy, has just gone out to all Dentists in Toronto appealing for their support to provide this dental relief service which the Academy in co-operation with the City are sponsoring.

QUEBEC

Mount Royal Dental Society. Dr. Francis Scott Weir, of New York, a well-known and outstanding man in the field of Dental Prosthesis, presented to the Society a practical clinic and lantern slide lecture on "Full Denture Prosthesis." Dr. Weir's clinic and lecture were very well received as the clinician covered his subject thoroughly.

Montreal Dental Club. Dr. J. C. Flanagan on March 4th gave a very well prepared and practical demonstration of the results of Dr. DeVan's teachings. A full upper and partial lower case were shown, illustrating the practical application of the embrasure saddle clasps. The importance of conserving the alveolar ridge by the setting of the teeth well in on the ridge and in a two dimensional occlusion was demonstrated. Dr. Flanagan also presented a technique for taking full upper impressions, and also for the preparation of cavities under a continuous flow of tepid water.

On March 25th Dr. G. Edward Tremble, Otolaryngologist, addressed the club on "The Antrum from the Dental Point of View." He described thoroughly the anatomy of the antrum in relation to the teeth, its connection

The Journal of The Canadian Dental Association

to the nose, and the continuity of the mucous membrane with that of other sinuses. He discussed treatment of an infected antrum, pointing out that if after ten or twelve irrigations the infection did not clear up a radical antrum operation was indicated. He dealt also with the benefits of nasal breathing, and felt that the apparent increase of sinus trouble may be due simply to its recognition. Many aches that were called neuralgia may have been chronic sinusitis.

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The Montreal Fall Clinic Committee announce that they have arranged a reduction in fees—resident members \$10 non-resident members \$5, which includes two luncheons. The following subjects will be covered: Children's Dentistry, Prosthetic Dentistry and Dental Therapeutics. Time will be given for group discussions, and a manufacturers' table demonstration. It is confidently expected that this year will equal, if not surpass, the high standard set in previous years. Dr. F. W. Saunders, 1414 Drummond Street, is chairman of the publicity committee.

NEW BRUNSWICK

At the March meeting of the Saint John Dental Society, two table clinics were given, one by Dr. J. F. Edgecombe on "Immediate Denture Service" and the other by Dr. M. A. Clay on "Rebasing Materials." There was considerable discussion also about the annual meeting of the New Brunswick Dental Society which is to be held in Fredericton this year.

NOVA SCOTIA

Dr. G. K. Thomson, Dean of the Dental Faculty of Dalhousie University, has had a lengthy period of illness. Happily, he has now recovered his usual good health.

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Dr. Wm. W. Woodbury attended the recent meeting of the American Society of Orthodontists at New York, being a contributor to the program.

■

Dr. Ralph R. Dalgleish, of Sydney, was in Halifax recently in his capacity as District Governor of the Y's Men's Clubs of the Maritime Provinces.

Dr. C. D. DesBrisay is making preparations for a transfer of domicile to the State of Maryland. He will be much missed by his friends.

PRINCE EDWARD ISLAND

In February the dentists of Charlottetown, co-operating in the dental hygiene campaign inaugurated under the auspices of the Provincial Department of Health, completed an inspection of the teeth of the children in the city schools, including Notre Dame Convent and the Model School. The examination showed very few children who had no defective teeth. This was followed by talks given by Dr. Harry Thomson, of the Canadian Dental Hygiene Council, in all the schools, motion pictures being used to illustrate.

Splendid co-operation was given in the dental examinations by the principals and teachers.

BRITISH COLUMBIA

The meetings of the Vancouver Dental Society this year have been outstanding and the papers presented have been of the highest order. Dr. Emery Jones presented a paper on "Oral Focal Infection and Its Relation to Systemic Diseases," with discussion by Dr. Hugh Monroe. Dr. J. A. Sampson's paper on "Space Maintainers," with discussion by Dr. G. Abrams, was full of practical suggestions. Dr. D. B. C. Duff, of the department of bacteriology of the University of British Columbia, spoke on "Bacteria in Oral Infections."

The British Columbia Association is putting on a drive to have a record attendance at the Pacific Coast Dental Conference, to be held at Long Beach, California, July 8-9-10-11-12.

Dr. J. McDougall received the liberal nomination for the constituency of Vancouver East, for the coming federal election.

ALBERTA

In February, a Calgary dental mechanic was fined \$400 with the option of six months at hard labour, for practising dentistry without a licence, this being the second offence. The accused told the court that he did not accept fees for himself but turned the money over to another dentist. The magistrate declared that such a statement was absurd.

News from the Provinces

PROGRAM

WESTERN CANADA DENTAL CONVENTION, JUNE 3rd, 4th, 5th

MONDAY—JUNE 3RD

- 8.00- 9.45 Registration of Delegates.
- 9.45-10.45 "Lecture Clinic on Periodontoclasia and Related Subjects"—Dr. M. H. Garvin, Winnipeg.
- 12.15 Announcements and Adjournment.
- 12.30 Luncheon—Formal Opening of Convention.
1. Welcome—President of Calgary Dental Society.
2. Greetings—City of Calgary, Mayor A. Davidson.
3. Minister of Health, Province of Alberta.
4. Welcome—President of Western Canada Dental Society.
- 2.00 Gold Inlay and Gold Foil Clinic—Dr. John T. Ryan, Mount Vernon, Wash.
- 4.00 Discussion Clinic — Causes of Failure in Denture Work—Dr. H. A. Gilchrist, University of Alberta.
- 5.00 Meeting of House of Delegates—Exhibits.
- 7.00 Banquet and Dance.

TUESDAY—JUNE 4TH

- 9.00 Clinic, Diagnosis and X-Ray Work—Dr. Clarence O. Simpson, St. Louis, Mo.
- 11.15 Exhibitors' Hour.
- 12.30 Luncheon.
- 2.00 Golf Tournament—Calgary Golf and Country Club.
- 7.00 Golf Banquet.

WEDNESDAY—JUNE 5TH

- 8.30 Clinic — Diagnosis and X-Ray Work—Dr. Clarence O. Simpson, St. Louis, Mo.
- 10.15 Table Clinics.
- 12.15 Announcements, Adjournment.
- 12.30 Luncheon.
- 2.00 Clinic — Diagnosis and X-Ray Work—Dr. Clarence O. Simpson, St. Louis, Mo.
- 5.00 Adjournment of Convention.

SASKATCHEWAN

The Regina Dental Society recently entertained the members of the Moose Jaw Dental Society and a number of dentists in the Regina district, on the occasion of the visit of Dr. Roy West, of Seattle. Dr. West gave a splendid practical clinic on local anaesthesia, exodontia and minor oral surgery, which was much appreciated by the large number of dentists present. The ample clinical material made possible a wide variety of operations which were decidedly interesting and instructive.

In the evening the Regina Society was host to the out-of-town dentists at a fine banquet, after which Dr. West lectured on local anaesthesia, illustrating his talk with demonstrations on wet anatomical specimens.

Meetings of the Moose Jaw Dental Society since the New Year have been well attended and interesting. In January Dr. L. F. Hare gave a very informative paper on "The History of Dentistry," tracing the progress of the profession from the earliest times. At the February meeting, with every member in the city present, Dr. Fred Murray gave a splendid report of some of the clinics given at the Alumni mid-winter postgraduate meeting at the North Pacific Dental College in Portland. The same evening Dr. F. C. Harwood gave a talk and table 'clinic on the "Fish" technique for full dentures, showing how Dr. Fish uses the muscles of the lips, cheeks and tongue to stabilize the dentures, rather than tend to dislodge them as formerly.

The Saskatoon Dental Society recently originated a very worthy project. Appreciating the vital importance of the study of cancer, and realizing that dentistry has a very definite responsibility regarding cancer of the mouth, they invited Dr. E. E. Shepley, radiotherapist of the Saskatoon Cancer Clinic, to address them. His paper was so instructive and comprehensive, and so timely in view of the King George Cancer Fund campaign, that the Saskatoon society had the address printed and distributed to every dentist in Saskatchewan. When space permits, it will be published in this Journal.

GENERAL NEWS

CHARLES MICKLE FELLOWSHIP

Dr. Edward Mellanby, M.D., F.R.C.P., F.R.S., and Mrs. May Mellanby, Hon. D. Sc., have just been awarded the Charles Mickle Fellowship for 1935 by the Faculty of Medicine, University of Toronto. This Fellowship is awarded annually to that member of the Medical profession who is considered by the Council of the Faculty of Medicine to have done most in the preceding ten years to advance sound knowledge of a practical kind. The Mellanbys have received the Fellowship because of their research in regard to rickets and dietetic factors relating to teeth. The award carries with it one year's income from a \$25,000 endowment.

PACIFIC COAST DENTAL CONFERENCE JULY 8-12, 1935

By HENRY L. HARRIS, D.D.S.,
Los Angeles, California.

The fourth triennial meeting of the Pacific Coast Dental Conference meets at Long Beach, California, July 8th to 12th. The meetings will be held in the new \$3,000,000 Municipal Auditorium.

Papers and clinics are being built around the theme, "Dentistry, a Health Service," and the program has been divided into six major sections:

1. Diagnosis.
2. Diseases of the hard and soft tissues of the mouth.
3. Restorative procedures and other remedies.
4. Preventive principles of dentistry.
5. Orthodontics.
6. Public relations and general clinics.

The entertainment committee offers most attractive features, such as — Trips to the famous Santa Cataline Island; golf; fishing (deep sea or barge); trips to Hollywood motion picture studios; Huntington art galleries and museum; California Technology Institute, and other points of interest.

An invitation is extended to all members in

good standing of the Canadian Dental Association to partake of this educational feast and, incidentally, spend a real vacation in Southern California.

During the last few days of January of this year, the strike of medical students in the chief university centres of France filled many columns in the daily papers. Over twenty per cent. of the 38,000 students are foreigners. Many of these after graduation remain in France, where all the professions are overcrowded. In Paris hundreds of students milled around the medical school shouting "Down with the foreigners!" A few of the twenty-five or so American students were roughly shoved away from the school entrances and told that all classes had been suspended temporarily. All lecture rooms and laboratories were ordered closed by the dean.

The strike lasted only a few days, but will probably be called again unless drastic measures are taken by the authorities to prevent the crowding out of French students by foreigners.—*Excerpt from Foreign Letters in the Journal of the A.M.A.*

OBITUARY

The many friends of Dr. A. D. A. Mason learn with sincere regret the untimely death of his beloved wife on April 15th. Those who knew her will remember Mrs. Mason as a charming lady, whose presence at any assembly gave dignity and grace to the occasion. Perhaps her greatest interest was her home, yet she found time for many activities. She was an active member of St. Simon's Anglican Church, a member of Rosedale Chapter of I.O.D.E., and a prominent member of Ladies' Committees in the Dental profession. Her kindly and congenial personality will be greatly missed among her many friends, and to Arnold and Miss Doris we extend our sympathy.

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ETIOLOGIE ET PROPHYLAXIE DES MALOCCLUSIONS

Par **PAUL GEOFFRION, B.A., D.D.S.,** Montréal, Canada

AUJOURD'HUI l'orthodontie n'est plus un métier qui consiste à fabriquer des appareils, les mêmes pour chaque forme de malocclusion; mais une science exacte, qui a pour base le système dento-maxillo facial à l'état normal. "Elle en détermine les déviations morphologiques sous leurs multiples aspects cliniques; recherche les causes qui les ont produites, prévoit les conséquences qu'elles entraînent,"¹ et donne les moyens prophylactiques de les éviter. Sans être un spécialiste en redressement, tout chirurgien dentiste a l'obligation morale, sinon de corriger certaines anomalies, du moins de les prévenir et d'empêcher ainsi des milliers d'enfants de s'en aller dans la vie avec des figures qui ne leur appartiennent pas.

En orthodontie comme en pathologie générale, chaque malposition est provoquée par une ou plusieurs causes, et les

nombreuses déformations dentaires qui peuvent se produire durant la période de développement de l'enfant sont toujours la signature de troubles héréditaires, congénitaux ou acquis. Ces troubles nous allons maintenant les étudier, pour ensuite donner les moyens à notre disposition pour les éviter ou, du moins, pour en atténuer les effets.

D'après le tableau que nous venons de donner, les causes de malocclusion se divisent donc en trois groupes, suivant l'époque de leur apparition.

Le premier groupe, que nous allons étudier, comprend les *Causes Héréditaires*, c'est-à-dire celles qui se produisent avant la fertilisation des cellules germinatives mâle et femelle, cellules qui possèdent toutes les caractéristiques susceptibles d'être transmises.

La question de l'hérédité des malocclusions est une de ces questions fondamentales qui ne laissent personne indifférent. Les ressemblances et les dissemblances,

¹Izard—Orthodontie P. 3 — La pratique stomatologique Vol. VII.

que chacun constate dans son entourage retiennent l'attention, et le mot *Hérédité* revient fréquemment dans le langage des parents qui l'invoquent à tout propos "pour apparenter des malpositions qui n'ont entre elles aucun rapport".² Le plus souvent le mot correspond à des constatations fort imprécises. Celles-ci sont généralement faites en passant, d'une manière hâtive; elles ne reposent, écrit Rabaud, "que sur des notions vagues, inexactes, recueillies dans les conversations de la vie courante qui ont pour aliment des idées traditionnelles, interprétations de faits vus en gros et de loin".³

Mais que valent ces idées du sens commun? Assurément elles ne fournissent aucune indication sur la nature de l'hérédité; elles détournent bien plutôt, de toute analyse rigoureuse, en accordant la valeur de faits à de pures affirmations. Dès lors, il importe donc que le dentiste sache quelle importance il faut attribuer à l'hérédité des malocclusions et c'est ce que nous nous efforcerons de voir dans les quelques pages qui vont suivre.

Autrefois toutes les causes inconnues des malocclusions étaient attribuées à l'hérédité. Vint ensuite l'époque où l'on niait complètement l'hérédité des malformations maxillaires et dentaires. Aujourd'hui il semble que l'on soit revenu à une conception plus juste et mieux raisonnée. Nous n'avons pas encore de preuve histologique ou embryologique de l'hérédité des malocclusions, et les différentes statistiques ne fournissent pas une solution générale ou finale absolument satisfaisante à ce problème. Mais il n'en semble pas moins vrai que certaines conditions, telles l'élimination ou la réduction de

certaines dents sont nettement héréditaires quand elles se rencontrent chez les descendants d'une même famille. "De même l'hérédité de certaines dispositions anatomiques peut favoriser la production de déformation, comme les grandes infections ou intoxications des géniteurs, telles la syphilis, l'alcoolisme, la tuberculose, le saturnisme"⁴ peuvent, tout en n'ayant qu'une action prédisposante, être la cause de malocclusions purement locales. Enfin, dans de nombreux cas de déformations des maxillaires et de la face, l'action déterminante de l'hérédité semble nettement prouvée.

Certains auteurs excluant l'hérédité, ont essayé d'expliquer l'élimination ou la réduction de certaines dents par l'insuffisance ou même l'absence de nourriture du bourgeon qui doit former l'émail de la dent. D'autres ont cru en trouver la cause dans les maladies constitutionnelles ou la destruction du germe de la dent permanente par l'extraction de la dent temporaire. Toutes ces explications sont exactes. Nous admettons volontiers que le manque de nourriture ou une nourriture insuffisante du bourgeon qui forme l'organe de l'émail peut amener l'élimination ou la réduction de la dent en cause. Nous admettons encore que plusieurs maladies à haute température, telles la rougeole, la scarlatine, peuvent, à cause de leur action destructive du tissu épithélial, affecter les dents et même détruire complètement leurs germes. Mais, par contre, comment expliquer le fait bien établi par les méthodes de statistiques, que chez les descendants d'une même famille, ce sont toujours les mêmes dents qui sont absentes ou réduites; le plus souvent les latérales supérieures, ou encore les

²Orthodontie—Izard P. 145 — La pratique stomatologique Vol. VII.

³L'Hérédité—Etienne Rabaud—page 1.

⁴Izard—Orthodontie P. 195. La pratique stomatologique Vol. VII.

deuxièmes prémolaires inférieures. Si l'absence ou la déformation de ces dents étaient entièrement dues au manque ou à une insuffisance de nourriture du bourgeon qui forme l'organe de l'émail, ou encore à des maladies constitutionnelles, pourquoi ne rencontrerions-nous pas aussi la réduction ou l'absence des deuxièmes prémolaires supérieures, des latérales inférieures?

Ne faudrait-il pas penser plutôt, que dans certains cas, l'hérédité a pu jouer un rôle plus important qu'on ne le croit dans l'élimination ou la réduction de ces dents et déterminer la malocclusion dans la dentition permanente, surtout quand le fait se présente chez les descendants d'une même famille. Car parmi les forces qui contribuent à maintenir les dents en position normale et la symétrie des arcades, nous n'en connaissons pas de plus importante que le point de contact proximal normal et l'harmonie dans la grandeur des arcades. Or ce sont justement ces deux forces qui sont détruites par l'absence d'une ou plusieurs dents.

C'est ainsi par exemple que l'absence de deux latérales dans le maxillaire supérieur favorise par suite du manque de point de contact, non seulement la mesio-gression des canines mais aussi de toutes les autres dents postérieures aux canines. Figures 1, 2 et 3.

L'absence des deuxièmes prémolaires inférieures favorise, par suite du manque de point de contact, la mesio-gression (progression) des premières molaires et la disto-gression (régression) de toutes les dents antérieures aux deuxièmes prémolaires, ce qui produira une propulsion des dents supérieures toujours augmentée par la pression de la lèvre inférieure. Figure 4.

Comment expliquer encore autrement que

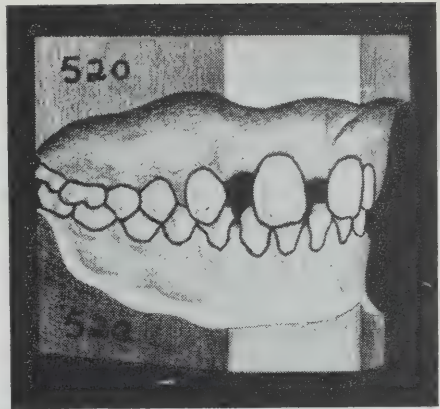


Fig. 1

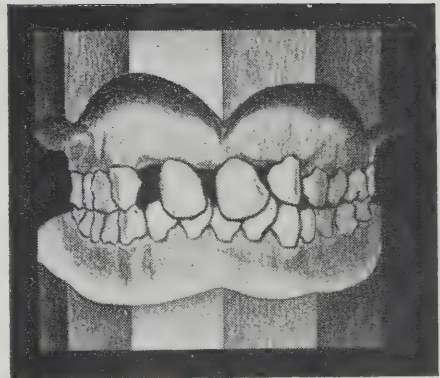


Fig. 2

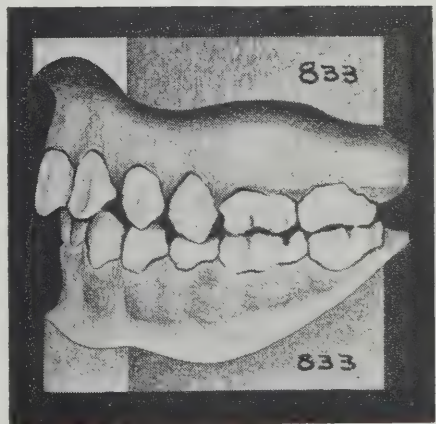


Fig. 3

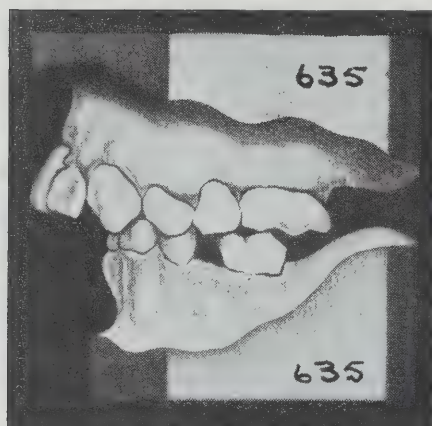


Fig. 4

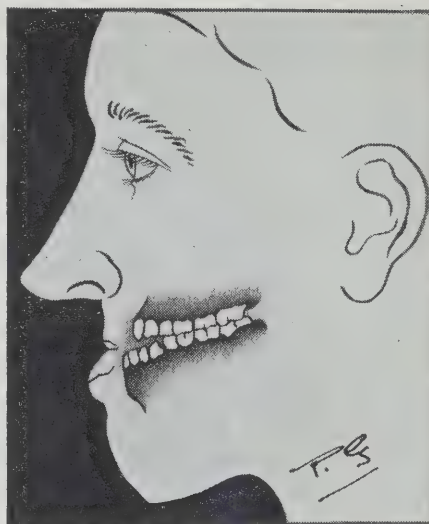


Fig. 4A

par l'hérédité certaines déformations des maxillaires par excès de développement, telle que la prognathie mandibulaire que nous rencontrons si souvent chez les descendants d'une même famille? Fig.: 4A. N'existe-t-il pas, nous répondront les adversaires de l'hérédité, des milliers de faits cliniques qui démontrent d'une façon évidente que ces cas de prognatisme sont dus: soit à l'imitation, à l'hypertrophie des amygdales, au rachitisme ou très souvent à l'extraction de certaines dents inférieures qui provoquent le glissement en avant de la mandibule.

Il est vrai que très souvent des enfants dont les parents souffrent de prognathie mandibulaire cherchent par tous les moyens à imiter l'attitude faciale de leurs parents. Si l'habitude est constante et particulièrement au moment de l'éruption des incisives permanentes, les incisives supérieures passeront en arrière des incisives inférieures, et donneront comme résultat une antéro-occlusion, difformité qui ressemble beaucoup à celle des parents, mais qui sera simplement une antéro-occlusion et non une prognathie du maxillaire inférieur. Chez l'enfant, l'hypertrophie des

amygdales peut être aussi la cause d'une antéro-occlusion et produire une difformité tout à fait semblable à celle des parents. L'enfant, en effet, pour empêcher la douleur produite par l'inflammation des amygdales, porte son menton en avant, garde cette habitude qui provoque tôt ou tard une antéro-occlusion qui n'est pas le vrai prognatisme mandibulaire que nous considérons comme héréditaire.

Quant au rachitisme, à l'extraction de certaines dents temporaires et des premières prémolaires inférieures, il est inutile d'y insister, car nous reviendrons sur ce sujet et verrons comment la perte prématurée de certaines dents peut amener le glissement en avant de la mandibule et produire une difformité semblable à celle des parents.

Mais, par contre, comment expliquer tous ces vrais cas de prognathie mandibulaire qui se transmettent d'une génération à l'autre, et parfois sautent une génération? Comment Galippe a-t-il pu suivre le prognatisme dans la famille des

Habsbourg depuis Charles Quint jusqu'à ses représentants actuels? Pouvons-nous croire que tous les cas de prognathie mandibulaire rencontrés dans la famille des Habsbourg ont été causés par de simples manifestations rachitiques, ou par l'imitation? Ne faudrait-il pas croire plutôt que ces malformations sont de véritables entités morbides dues à l'hérédité pure?

Donc pour résumer, nous dirons:

1 o- Que par tous les faits allégués en sa faveur, l'hérédité semblerait, (malgré l'absence de preuve) jouer un rôle indéniabla dans certains cas de réduction ou d'élimination des latérales supérieures et des premières prémolaires inférieures, quand elles se rencontrent chez les descendants d'une même famille. Cas inexplicables par des causes congénitales ou acquises.

2 o- Que l'influence de l'hérédité pathologique est indéniable. Qu'elle agisse directement sur les dents, les maxillaires, les articulations temporo-maxillaires en "troubant leur évolution, en altérant leur structure" ou qu'elle agisse indirectement par le terrain prédisposé aux infections où se développeront les causes locales.

3 o- Qu'enfin certaines déformations des maxillaires par excès de développement, telle la prognathie mandibulaire semblent nettement héréditaires.

Cependant il ne faudrait pas considérer la question de l'hérédité comme tranchée, et dire que toutes les anomalies de forme et de nombre, que toutes les ressemblances familiales sont héréditaires. Car il existe

une multitude d'exemples de non transmissions qui nous démontrent que très souvent ces anomalies sont dues à des causes purement congénitales ou locales. Aussi, avant de conclure, il faudra toujours se souvenir qu'il est facile de se tromper et qu'il n'y a vraiment d'hérédité, c'est-à-dire des similitudes s'ajoutant à la continuité, que dans la mesure où les conditions demeurent suffisamment constantes pour ne faire subir à la matière vivante aucune modification.

Avouons-le: certaines formes de malocclusions, peu nombreuses il est vrai, sans l'hérédité sont très difficilement expliquables. Quant à l'hérédité acquise, non seulement elle est très difficilement concevable, car les faits embryologiques et histologiques lui sont franchement contraires.

Mais ne pas comprendre ou comprendre mal un phénomène, n'autorise pas à nier l'évidence de certains faits. "En tout cas il est à constater que dans ces questions si obscures de la biologie générale, l'erreur est très facile. Ce ne sera que quand la science aura pu découvrir le mécanisme de la reproduction et pas avant que nous pourrions comprendre exactement le phénomène de l'hérédité"⁵

Dans un autre article, nous étudierons les causes congénitales et verrons comment elles peuvent produire les malocclusions.

Edifice Medical Arts, Montreal, Canada.

⁵Anomalies de l'occlusion dentaire (Subirana) P. 99.

CONGRÈS DE L'ASSOCIATION DENTAIRE DE L'ONTARIO

Le Congrès annuel de l'Association Dentaire de l'Ontario aura lieu à l'Hôtel Royal York les 20, 21 et 22 mai.

Un programme très instructif, théorique et pratique a été élaboré.

Tous les dentistes exerçant leur profession selon les règles de l'éthique, aux États-Unis

comme dans les autres provinces du Canada, sont les invités de l'Association Dentaire de l'Ontario.

FRED J. CONBOY,
Secrétaire-Trésorier,
Société Dentaire de l'Ontario.

86 Bloor Street West, Toronto, Ont.

LES HONORAIRES ET LE JUGEMENT DU DENTISTE DANS LA CONFECTION D'UNE "PROTHESE"

Par JOSEPH N. STEWART, D.D.S., Hamilton, Ontario

(Traduction du texte anglais par REMY LANGLOIS, B.A., D.D.S., Quebec, P. Q.)

EN me remémorant les cliniques, cours et conférences auxquels j'ai assisté, j'en suis venu à la conclusion que nos méthodes actuelles de procéder ne sont pas assez souples pour répondre à nos besoins. En effet, n'essayons-nous pas constamment de fermer une ouverture carrée avec une cheville ronde?

Il est certainement possible de fixer une échelle d'honoraires qui laisserait au patient le choix d'une prothèse selon ses idées et sa bourse, mais qui donnerait encore au dentiste une rémunération satisfaisante pour ses services. Ce tarif, en effet, simplifierait beaucoup les choses, tout en nous évitant de nombreuses discussions avec le patient, discussions, hélas! toujours désagréables. Nous en sommes rendus, à l'heure actuelle, à un point culminant pour notre profession. Et il est temps d'aplanir les difficultés et d'orienter l'exercice de notre profession hors des sentiers déjà battus.

Dans la confection du dentier, le dentiste de compétence moyenne a enseigné à ses patients de ne s'attendre qu'à un service minimum et cela à un prix minimum, comme s'il ne s'agissait que d'une simple commodité. Supposons même que ce soit une commodité, apprécions-nous sa valeur autant que celle d'un article quelconque que nous nous procurerions dans une boutique.

Il existe certainement une grande variation dans les prix et la qualité de toute marchandise. Souvent même le nom d'un article importe moins que la réputation

du manufacturier. Le public en général se tient au courant de la véritable différence de valeur entre des objets de même nature, mais lorsqu'il s'agit de confection de prothèses, nous nous heurtons à une condition lamentable créée par les dentistes eux-mêmes. Trop souvent le dentiste néglige d'expliquer à ses patients qu'une pièce de prothèse peut se construire selon des méthodes bien différentes. C'est l'erreur de la plupart des dentistes. Sur eux retombe la responsabilité de cet état de choses et non sur le public. En général, le dentiste en établissant ses honoraires, pense plus à la concurrence que lui fait un confrère sur la même rue, qu'il ne songe au service à rendre en restaurant la bouche d'un patient selon toutes les règles de l'esthétique. Tant de facteurs sont à considérer dans chaque cas, que c'est une erreur de penser que le dentier confectionné pour une personne doit ressembler en tous points à celui d'un autre client. En effet, une dissemblance existe entre tous les patients tant au point de vue conformation physique de la bouche qu'au point de vue tempérament et faculté d'adaptation. Il en est de même des dentistes. Le talent, l'habileté et la droiture de l'un ne se retrouvent pas au même degré chez un autre. Analysons donc ici quelques-uns de ces facteurs qui peuvent influencer sur les honoraires.

Le point de vue du dentiste.

1 o. Dans quelle mesure les conditions physiques d'une bouche sont-elles favo-

rables ou défavorables? Combien de temps supplémentaire le dentiste devra-t-il employer pour assurer au patient confort et satisfaction?

2 o. Le patient est-il jeune ou vieux; est-il incapable de supporter le moindre malaise?

3 o. Comment réagira le patient lorsqu'il portera le dentier? Aura-t-il des nausées? Coopérera-t-il avec vous? . . . Rappelez-vous bien que votre travail ne pourra donner satisfaction sans la coopération du patient.

4 o. Saura-t-il apprécier le confort et l'apparence du dentier? Voilà qui est important. Telle personne paiera plus pour une sacoche que pour un dentier, alors qu'une autre préférera une prothèse parfaite à un manteau de fourrure ou même à une automobile. Rappelez-vous surtout qu'il est loisible à toute personne de dépenser son argent comme bon lui semble. Nombreux sont ceux qui voyageront deux ou trois cents milles pour pêcher quelques poissons évalués peut-être à une couple de piastres. D'autres iront encore aussi loin pour assister à une joute de "ballon au champ" ou à une partie de boxe, et ils croiront en avoir eu pour leur argent. Cependant, ces mêmes gens ne saisiront pas l'importance de certaines qualités d'un ouvrage de prothèse, parce qu'aucun dentiste ne leur aura enseigné à apprécier, à leur juste valeur, le confort et l'apparence d'un dentier.

5 o. Le patient est-il en mesure de payer? Ceci n'est qu'un facteur secondaire, car d'ordinaire les gens trouvent toujours moyen de se procurer ce qu'ils désirent fortement. L'homme riche qui sait apprécier l'art dentaire, j'en conviens, sera toujours disposé à se procurer le "nec plus ultra".

Le point de vue du patient.

Plaçons-nous maintenant au point de vue du patient:

1 o. Quelles sont les qualifications et l'expérience du dentiste?

2 o. Est-ce un homme intègre et digne de confiance?

3 o. Est-ce un artiste en son genre, ou monte-t-il ses dentiers de la même façon pour tous ses patients?

4 o. Prendra-t-il plus de précautions et de temps, emploiera-t-il une technique plus précise dans la confection d'un dentier dispendieux que dans celle d'une prothèse au coût peu élevé?

5 o. Possède-t-il l'équipement requis pour la confection d'un ouvrage parfait? L'habileté vient en premier lieu, l'équipement n'est qu'un accessoire. Ainsi au moyen d'empreintes prises en peu de temps et avec simple articulateur à peinture, un dentiste de grande habileté peut construire une meilleure prothèse, qu'un autre confrère maladroit. Ne déduisez pas de ceci cependant que l'équipement n'est pas nécessaire, car il est essentiel pour permettre à un dentiste d'accomplir des travaux de premier ordre. Un bon équipement est pratique en autant que ce soit un homme de première valeur qui s'en serve. Car l'opérateur médiocre ne pourra jamais produire un travail parfait même avec une instrumentation de première classe. D'après mes observations, j'ose dire qu'un dentier seulement sur vingt-cinq est en occlusion centrale. Pas plus d'un sur cent n'est monté suivant la courbe de Spee, qui se trouve différente pour chaque porteur de dents postiches. Pas plus d'un dentier sur mille n'a reçu le meulage définitif des dents, meulage indispensable pour une occlusion parfaite,

et cependant les patients semblent tolérer toutes ces imperfections.

Pas plus d'un dentiste sur cent ne possède l'habileté nécessaire pour donner pleine et entière satisfaction, et cela simplement parce que les membres de notre profession ne croient pas pouvoir recevoir, de leurs patients, une rémunération qui justifierait la prise du temps nécessaire pour la confection d'une prothèse, selon les règles les plus avancées de notre art.

Peu d'entre nous atteignent la perfection, mais en nous efforçant d'atteindre un but plus élevé, nous pourrions facilement perfectionner notre technique et, partant, donner à notre clientèle des services plus appréciés. N'allez pas vous donner la même peine pour chaque cas, car en bien des circonstances vos efforts et votre temps iraient en pure perte, faute d'appréciation de la part du client. En d'autres termes: "Ne semez pas des perles devant les pourceaux". Par ailleurs, ils se rencontrent nombreux les gens qui, véritables connaisseurs en présence d'un travail d'art, consentent à verser de bon gré les honoraires demandés.

Personnellement, je ne partage point l'opinion qu'il faille toujours traiter la clientèle tout comme s'il n'existait aucune différence entre les conditions pécuniaires des patients. Je me demande si les apôtres de cette dernière opinion, par trop idéaliste, mettent en pratique ce qu'ils prêchent si bien. S'il leur arrive de nourrir des mendiants, leur servent-ils des filets mignons dans leur porcelaine la plus délicate ou leur argenterie la plus riche, ou leur offrent-ils simplement une nourriture substantielle d'un prix modique? En art dentaire, nous devrions traiter tous nos clients avec droiture, mais tout en tenant compte forcément de la condition de chacun d'eux. Il devrait exister une en-

tente entre les dentistes d'une même région ou ville pour déterminer une échelle d'honoraires minimum. On éliminerait ainsi les dentistes qui travaillent pour des honoraires de famine; on encouragerait les nouveaux dentistes et on permettrait aux craintifs de se placer sous la protection de tout un groupe de confrères. Les dentistes avaient déjà dressé une échelle d'honoraires lorsque je commençai l'exercice de ma profession à Hamilton, et je me rappelle encore le bienfait que ce fut pour moi. Ceci m'aida énormément, et je crois, en toute sincérité, qu'un grand nombre de dentistes atteindraient les couches supérieures de notre profession, s'il leur était donné d'exercer leur art au milieu d'une population plus renseignée sur la qualité des services. Ce terrain, c'est aux dentistes de le préparer et non aux clients. Nous recevons tous une éducation dentaire des plus élevée, et c'est à chacun de nous qu'il appartient de relever le niveau de la profession.

Les dentistes expérimentés devraient aider leurs jeunes confrères à établir et à maintenir un tarif minimum. Ce leur serait profitable et les induirait à poursuivre leurs études.

Résumé

Il y a différentes méthodes de confectionner un dentier, et le tarif devrait être proportionnel à l'effort accompli. Voici quelques-unes de ces méthodes:

"Impressions"

- (a)—Impressions en un temps; en Kerr ou en plâtre.
- (b)—Impressions de Kerr avec léger ajustement pour les muscles.
- (c)—Impressions de Kerr, suivies d'une légère couche de plâtre.
- (d)—Impressions sectionnelles de Kerr avec ajustement complet pour muscles.

Section Française

"Modèles"

- (a)—Plâtre.
- (b)—Pierre.

"Articulé"

- (a)—Prise de l'articulé avec cire molle.
- (b)—Prise de l'articulé avec bourrelets de Kerr mous montés sur plaque base.
- (c)—Articulé pris avec bourrelets de Kerr taillés à la hauteur voulue pour haut et bas et maintenus en occlusion centrale avec de la cire ou des crampons.
- (d)—Prise de l'articulé avec des bourrelets parfaitement adaptés permettant l'usage du plan incisif de Gysi.
- (e)—Enregistrement de l'articulé en protrusion.
- (f)—Prise de l'articulé en plâtre, comme le recommande Stansbery.

"Articulateurs"

- (a)—Articulateurs à denture.
- (b)—Snow ou de genre semblable.
- (c)—Hanau ou Gysi, articulateurs adaptables.
- (d)—Stansbery.

"Qualité des Dents"

- (a)—Les plus communes.
- (b)—Les meilleures.
- (c)—Les meilleures, mais différentes quant aux moules et couleurs, afin de briser la symétrie.
- (d)—Les meilleures, mais modifiées en les meulant et en les nuancant.

"Montage des Dents"

- (a)—Montage ordinaire pour une pièce préparée sur un articulateur à denture.
- (b)—Montage des dents en suivant la courbe de Spee.
- (c)—Montage, en suivant la registration du Hanau.
- (d)—Montage, en suivant la registration du trépied de Stansbery.

"Cirage"

- (a)—Cirage simple.
- (b)—Cirage festonné et avec les rugosités palatines.

"Matériel pour Base"

- (a)—Vulcanite.
- (b)—Matériaux compressibles.
- (c)—Luxene.
- (d)—Acier non oxydable.
- (e)—Or.

"Correction des surfaces d'occlusion ou meulage définitif"

- (a)—Laisser les dents de la pièce de prothèse telles qu'elles sortent du vulcanisateur ou de la presse.
- (b)—Meulage des points mis en évidence par le papier carbone.
- (c)—Meulage définitif tel que recommandé par Hanau ou Stansbery.

Constatez-vous maintenant qu'il soit facile de satisfaire tous les goûts et toutes les bourses? Connaissez bien vous-mêmes les diverses méthodes et faites en sorte que le public en sache quelque chose.

683 Main Street East, Hamilton, Ontario.

The Journal of The Canadian Dental Association

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TESTAMENT

Mes amis, si j'allais mourir
Sans avoir complété ma tâche,
Si je sombrais sans atterrir
Au havre cherché sans relâche;

Jusqu'à l'ultime éclosion
De l'inextinguible lumière,
Sans avoir vu ma vision
Si j'allais fermer la paupière;

Pour n'avoir pas été vainqueur,
Pour avoir perdu la bataille,
Avec de l'amertume au cœur
Ne craignez pas que je m'en aille.

Car je ne regretterai rien:
Ni l'humilité de mon geste,
Ni d'avoir fait trop peu de bien.
J'en ai fait, qu'importe le reste!

J'en ai fait, le ciel soit béni,
Chaque fois que j'en ai pu faire.
Sans que mon labeur soit fini,
Si Dieu me prend, c'est son affaire;

Et je me compte heureux, vraiment,
Je vous le confie à voix basse,
D'avoir été tout simplement
Un passant inconnu qui passe.

JOSEPH NOLIN.



JOSEPH NOLIN

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SOME PROBLEMS IN THE FIELD OF CHILDREN'S DENTISTRY

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CHILDREN have been the object of many movements for the provision of clinical dental care. The motives have ranged from the desire that actuated Thomas Forsyth in giving the Forsyth Dental Infirmary, that children should be spared the pangs of toothache, to the objective of building up the health of the nation through the elimination of the degenerative diseases having their origin in dental infection. Through this range there have appeared the motives of the prevention of malocclusion through loss of the first permanent molar, with special consideration for the peculiar susceptibilities of this tooth, and efforts to maintain the maximum of masticating efficiency and to avoid the establishment of septic conditions in the mouth which would cause contamination of food as it was passing through the oral cavity. The mouth hygiene campaign has been waged along these lines for many years. The latest development is the move to extend this campaign into the age period when the deciduous teeth constitute the entire dentition.

This phase will be presented from the vantage point of experience at the Guggenheim Dental Clinic, where for more

than three years I have come in intimate contact with children's mouths exhibiting every type and shading of dental condition from perfection of structure and immunity of disease down to the most pitiful and well nigh unbelievable examples of susceptibility to both dental and periodontal disease.

The Guggenheim Dental Clinic is situated in one of the poorest sections of New York City and admits only the poorest of the children living in that section. It is possible therefore, that dental disease as seen at this Clinic, may be more severe in type and wider in distribution than in localities where economic conditions are better. Even if we grant the validity of this surmise, the fact must still be faced that the differences observed are differences of degree only and that essentially the same problem looms in the more favoured parts of our cities.

What are these conditions? The Clinic admits children on a basis of financial eligibility only, hence all needy children in the district are admitted without regard to their possible dental needs. Such immune mouths as there are, come to us with the susceptible ones. Yet we find that 98.2% of children of all the ages

admitted to the Clinic (2-14 years) have one or more cavities.

PRESCHOOL CHILDREN

The high percentage of children with caries, reported above, indicates a very serious situation from both health and economic viewpoints. But this situation has in it another aspect that should immeasurably increase our concern. This is exhibited in the figures for caries in preschool children. Figures for this group up to December 31, 1933, were reported before the American Dental Association in 1934. Figures for the past year, now available, show a high correlation with those of preceding years. Briefly, we find:

Age	Per Cent with Cavities	Per Cent with 7 or More Cavities
2	47	13
3	79	37½
4	89½	56
5	96½	60

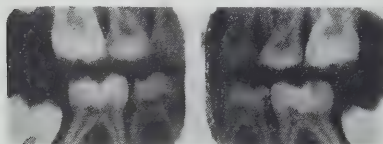


FIG. 1

Bite-wing x-rays of posterior teeth of patient age 5. Note proximal caries on distal of both lower first deciduous molars.

Children with more than 7 cavities usually have at least one tooth requiring extraction because of an incipient or actual abscess.

When we look over the above figures we are faced at once with the fact that a truly awesome amount of dental disease is getting under way in children's mouths before the six-year molar has made its appearance, which means also—before the child enters school. When we analyze the damage so occurring we find that far too often it has been so extensive that by the time the child reaches kindergarten, one, or sometimes several, deciduous molars have been extracted, or must at once be removed. This is very apt to result in malposition of the first permanent molar with consequent loss of one of the features that give this tooth its outstanding value. Putting it in another way we may say that if lifetime dental health is served by preserving the first permanent molars and maintaining them in normal occlusion, then it is imperative that the deciduous molars be preserved as an essential means to that end. I have not infrequently seen five-year old children who have had to lose every deciduous molar because of caries starting in early childhood. The effect of the premature loss of so many of the pos-

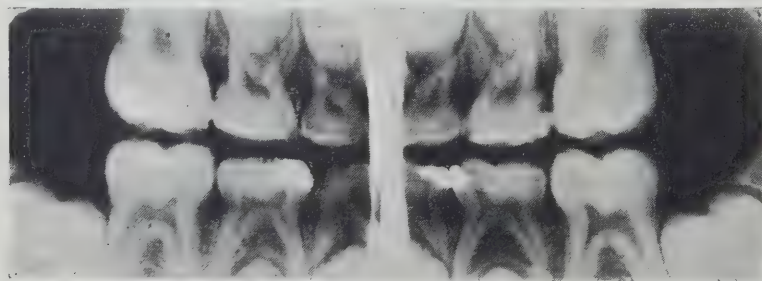


FIG. 2

Bite-wing x-rays of posterior teeth of patient age 8. Note filled cavities and new cavities on proximal surfaces of deciduous molars.

terior deciduous teeth is to allow mesial drifting of the six-year molar; also it causes a closing of the bite so that the six-year molar cannot erupt to its full height. Thus there occurs a permanent malocclusion of a distressing kind.

While I am on the subject of the pre-school child, may I call your attention to a situation commonly encountered that has not heretofore been commented upon in dental literature. This is the high susceptibility of the proximal surfaces of the deciduous molars. In the majority of cases showing caries in the deciduous dentition the first lesions are found on the proximal surfaces of the molars, especially the mesial surface of the second molar and distal surface of the first molar. (Fig. 1, 2.) These cavities defy explanation on the basis of defective contacts, for such conditions practically never obtain in that region. Not only is the relationship of these teeth virtually always normal, but the interproximal gum tissue is always placed well up to the contact point, affording ample protection against the lodgement of food debris. I have no theory to propound in explanation of this condition, but suggest that it is probably the expression of a systemic fault. However that may be, it is certain that the practice of prophylactic odontotomy, so valuable for the permanent molars and for the premolars, will not solve the problem. (Fig. 3, 4, 5.)

FILLING MATERIALS

I need hardly say that we fill all deciduous teeth that are found to be savable unless the age of the patient and the X-ray findings indicate that the carious tooth is due to be shed within six months. In those cases carious teeth are at once extracted. All deciduous teeth

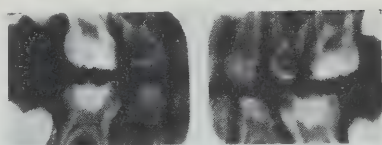


FIG. 3

Bite-wing x-rays of posterior teeth of patient age 5. Note extensive caries in all teeth shown. Note also that the x-rays show depth of cavity in relation to the position of the pulp. When caries is extensive this provides a means for determining probable pulp involvement without the necessity of excavating the cavity. In all cases shown in the above x-rays all pulps of deciduous molars are involved with the possible exception of the lower right second molar.

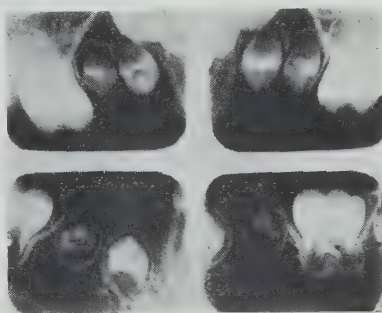


FIG. 4

Single x-rays of upper and lower posterior regions of patient age 5. All deciduous molars have had to be extracted because of extensive caries. The six-year molars have not yet erupted. Such conditions are not uncommon in pre-school children.

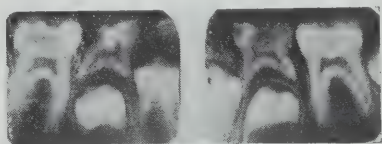


FIG. 5

X-rays of lower posterior teeth in patient age 7. Note the involvement of pulps of both permanent first molars by caries. The occlusal surfaces of these teeth showed no break in the enamel.

that are to be filled receive as careful attention in the way of cavity preparation as though they were permanent teeth and receive permanent fillings. Silver amalgam is used in all posteriors and in all deciduous anteriors where retention can be gained.

We find that disintegration of the gingival margin and wear on occlusal sur-

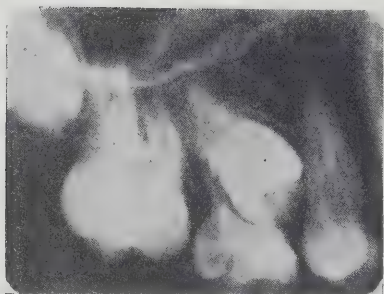


FIG. 6

X-ray of upper left posterior region in patient age 13. Note retention of second deciduous molar beyond normal time for shedding. This is due to asymmetric absorption of the roots. Deflection of the bicuspid results.

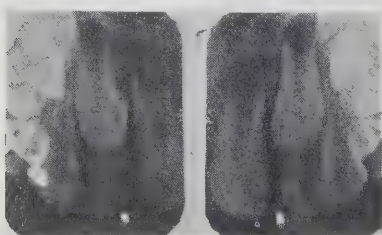


FIG. 7

X-rays of upper anterior region of patient age 7. Note failure of deciduous lateral roots to be absorbed. Routine x-rays permit detection of such conditions and help in the prevention of future malocclusion.

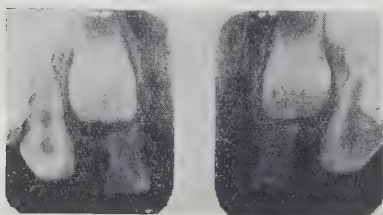


FIG. 8

X-rays of upper anterior region of patient age 4. This illustrates a rare anomaly, congenital absence of the deciduous lateral incisors. The value of x-rays for prevention of malocclusion is illustrated here.

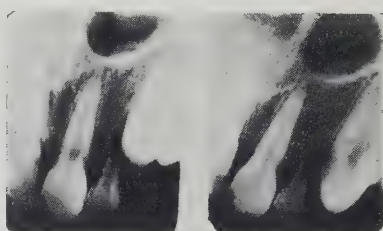


FIG. 9

X-rays of upper right incisor region in patient age 10½. The x-ray on the left shows the absence of the permanent lateral incisor and the encroachment of the permanent cuspid on the root of the deciduous lateral with consequent root absorption. The x-ray on the right shows the same case four months later when, with spontaneous jaw growth, the permanent cuspid moved distally and erupted in its proper position. Numerous instances of such spontaneous jaw growth can be detected in serial x-rays. No appliances were used.

cedure. It should not be necessary to mention workmanship, yet I submit that the use of a material so easily and quickly placed as cement encourages laxity in cavity preparation and even in the matter of complete removal of decay. You may say that badly decayed deciduous teeth cannot be prepared to retain properly contoured amalgam fillings. This is true in many instances, but in these cases I would rather have an amalgam filling that will provide a reasonable restoration of form and that will protect cavity margins for a period of years, than the most beautifully contoured cement filling conceivable that will rapidly lose its original mesio-distal dimension and occlusal height and will quickly permit ingress of bacteria at the gingival margin.

BONE GROWTH

There is a tendency among dentists to overlook certain features of the problem of dental caries which need to be evaluated. For instance, it is very commonly assumed that there is high correlation between bone growth, both skeletal and maxillary, and immunity to caries. We frequently read that "on such and such a diet, children will have sound teeth in

faces which are the weakness of all cement fillings are done away with, obviating the need for frequent replacements. Then, too, the improvement in function, while less tangible, is nevertheless recognizable and constitutes a very important reason for advocating this pro-

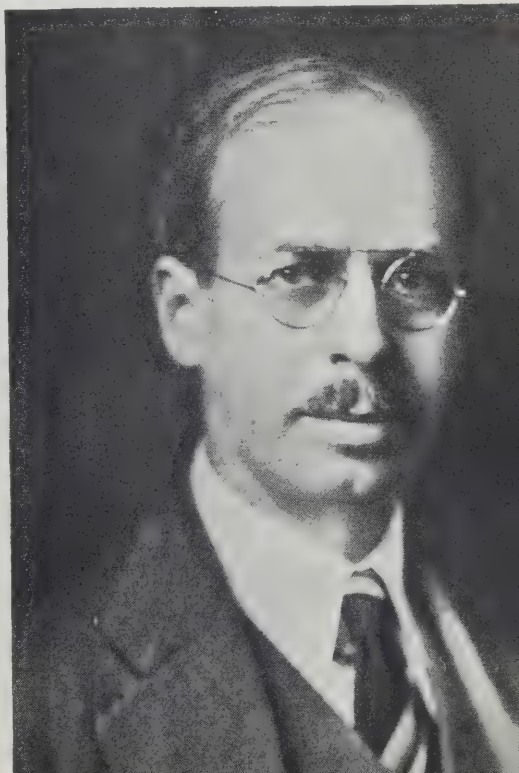
well-developed arches." Actually this correlation is slight, if we may judge bone growth by the spacing of the deciduous incisors at 4 to 5 years. Frequently very satisfactory spacing occurs in mouths that show considerable dental caries, while, on the other hand, beautifully formed deciduous teeth free from caries may show no spacing at all and may even exhibit a crowded condition. I have even seen severe class II malocclusions in five-year old children with teeth otherwise perfect.

I have mentioned lack of correlation of jaw growth and dental condition. I have seen evidences of lack of even ordinary jaw growth. A fairly common instance of this is found in the upper jaw. In these cases the space to the distal of the upper deciduous second molars is not sufficient for the eruption of the first permanent molars, with the result that these teeth become impacted. In such cases the disto-buccal roots of the deciduous molars become absorbed as the permanent molars descend upon them. This is often followed by abscess of the deciduous molars. On the other hand, I have often seen evidence of spontaneous bone growth. Neither of these phenomena seem to be related to caries susceptibility. In the latter case space may develop spontaneously, permitting the eruption of teeth apparently doomed to be permanently impacted. (Figs. 6, 7, 8, 9, 10.)

ENAMEL HYPOPLASIA

Enamel hypoplasia, mentioned above, has received much less attention than its importance warrants. Such comment as is found in the literature indicates a rather superficial observation of its relation to systemic states. Mrs. Mellanby, to be sure, has made careful studies of this condition both in dogs and humans, and

claims to be able to produce it in dogs at will by manipulation of the diet. Her statements regarding this relationship are important. On the other hand, she assumes that hypoplastic enamel, by its very existence, predisposes the tooth to caries. My observations are that hypoplastic teeth are, on the whole, no more susceptible than teeth better formed, unless malformation is very severe. I do not condone hypoplastic enamel, for it presents serious problems, but merely mention facts. The occurrence of hypoplastic enamel points undoubtedly to a disturbance of calcium metabolism, and its location in the dentition sets the date of occurrence of that disturbance. As most of the clinical hypoplasias involve the occlusal enamel of the first permanent molars and the incisal third of the permanent incisors, the date of the average calcium disturbance is set at and immediately following birth, the time when these



JOHN OPPIE McCALL

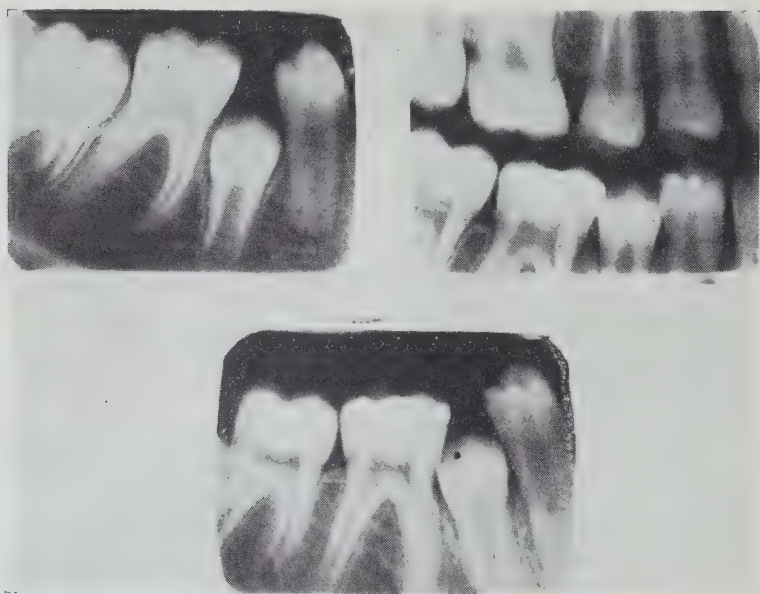


FIG. 10

X-rays of the left posterior region of patient at the successive ages of 11, 12, and 13. Note in the upper left x-ray the insufficient space for the eruption of the second bicuspid. The lower x-ray taken at 12 years of age shows the partial eruption of the bicuspid with some opening up of the space. The upper right x-ray taken at age 13 shows further eruption of the bicuspid with increased opening up of the space. This is an example of spontaneous bone growth; no appliances were used in this case.

areas are being calcified. The importance of prenatal and early postnatal dietary supervision is thus emphasized. There is evidently a need also to bring dental education up to date as regards the actiology of this condition.

CONCLUSIONS

These observations about problems relating to dental health are presented with the thought of indicating that there is a need for further study into the causes of dental disease, if we are to deliver to the public a truly scientific dental service. There is a need for more carefully gathered and more fully evaluated statistics on present dental conditions. The possibilities of prevention inherent in dietary change need to be more fully explored; and when practicable changes in the American dietary that will directly benefit the teeth and their supporting structures

are discovered, they must be presented to the public in the most convincing way possible.

These are some of the problems that confront us in the field of children's dentistry. Exploration of this field by any dentist who has his eyes open, will reveal much to interest and, in fact, to fascinate him. No longer is dentistry for children a side issue, something to which attention is grudgingly given in a practice in which the problems of restorations for adults seem so much more important. If the dental profession is to continue to merit the approbation which it has won through its services to the adult population, it must give to dentistry for children the proportionate attention it deserves; for the real foundation of adult dental health is laid in the dental health of the child.

February, 1935.

SOME PHASES OF PREVENTIVE DENTISTRY OF SPECIAL CONCERN TO CANADIAN DENTISTS

By WESTON A. PRICE, D.D.S., M.S., F.A.C.D., Cleveland, Ohio.

(Concluded from May Issue of THE JOURNAL)

IT IS of particular interest and satisfaction that progressively during the period of a dozen years the writer's professional service has been changing from a reparative and restorative dentistry to a purely preventive type of service. From the standpoint of satisfaction for both the patient and the dentist the results are far more gratifying. Were it not for being misunderstood, chiefly by the profession, I would gladly say to my regular patients that I would fill all cavities gratuitously, that would develop while they were on an adequate nutritional program. Such a statement would be entirely justified on the basis of my clinical experience in applying these new principles for the control of tooth decay. It is also gratifying to note that coincident with the control of the tooth decay there has been a very great improvement in the health and physical efficiency. This is very important.

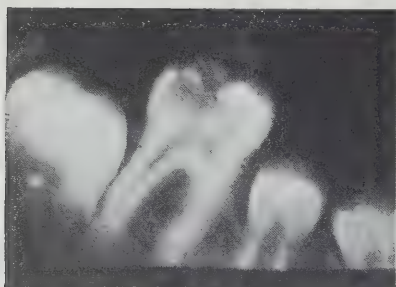
In several communications^{13 14 15} I have reported on quite large groups of individuals who have been under nutritional treatment, both in clinical practice and very severe cases selected from mission groups.

As an illustration three extreme cases will be presented. The second of these is selected in part because I had previous-

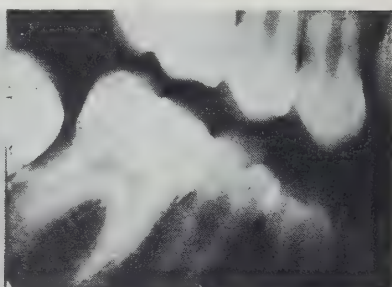
ly reported it to the Canadian profession in my paper in *Oral Health*¹⁶. It will accordingly, be of interest to you to have a report of progress of this case.

FIRST CASE

The first case is typically instructive since it shows a marked physical disturbance associated with the dental caries. The roentgenograms of the case are shown in Fig. 1, with the dates indicated. This boy was brought by his mother because of a severe pulpitis in the lower right molar. He was in such a nervous condition that we could not even make an examination. His mother advised that he had been out of school for weeks because of his nervous state which made it quite difficult for the teacher and the school children to get along with him. He even cried out in his sleep at night. On inquiring relative to his nutrition there was revealed at once a very marked deficiency in minerals and vitamins. Perhaps because he was an only child he was more indulged regarding his choice of foods. He was given the high vitamin capsules consisting as I have reported, of a mixture of a concentrate of high vitamin butter and a specially high vitamin cod liver oil of equal parts in naught size capsules containing six-tenths of a



(Date) 1-18-32



(Date) 1-25-33

FIGURE 1

This shows the building in of a deep roof of apparently normal dentine over a nearly exposed pulp as a result of reinforcement of the nutrition.

gram. He was to take three capsules with each meal. His nutrition was outlined to contain at least one quart of milk a day, a cooked whole wheat cereal which for fear they would not readily find it on the market was provided in sample form, his bread to be whole wheat, rye or pumpernickel, an addition of specially high vitamin butter, fruits, vegetables and sea foods. Within a week his mother called up to inquire if it could be possible that in so short a time there could be a marked improvement in his sleeping at night, in his general nervousness and his crying. In less than two weeks' time he was coaxing to go to school which he was allowed to do. The pulpitis rapidly subsided and in ten days we had no difficulty in making roentgenograms of the teeth and place some temporary fillings.

In about two months after this boy started on this improved nutritional program his father wrote as follows:

"I want to especially mention the unusual improvement in the case of D—. His nervous condition last year made it necessary to send him to Florida. This trip helped considerably but the last two months down there were not equal to three weeks of your treatment. I have

thought a lot about the good that you have done him which will probably affect his entire life. Undoubtedly many others are having this same sort of appreciation. You will be interested to know that upon his own volition he began to discontinue biting his finger nails after the third week of your treatment. He, of course, began to increase in weight immediately. He also played better and for longer periods. He has gotten along better with his playmates, being less irritable. He does not tire as much during the day. He began to concentrate better and his school work at this time is showing great improvement. To be frank with you, I began to question whether we were ever going to raise this boy."

The comment made by the teacher and the father relative to the improvement in his school work is probably best expressed in his school report cards in which his grade in arithmetic improved from 55 to 97.

It is important to note the changes in the dental condition. The first view made on January 18, 1932, shows the extent of decalcification which had gone quite completely to the pulp chamber and it was not surprising that the boy was suffering from pulpitis. With ordi-

nary procedures it might logically have been expected that this tooth would go from bad to worse and since root fillings are so difficult and so questionable in all lower molars even in the hands of our best and most competent operators, this tooth would probably have been extracted. In the second view will be seen the tooth one year later on January 25, 1933. A splendid zone of calcification has formed beneath the filling. The tooth carried a temporary filling for nearly a year when it was replaced by a more substantial filling of alloy over cement. This was done largely to support the frail walls of the crown of the tooth and also to remove part of the former decalcified and infected dentine. On removal of the temporary filling the dentine was found so hard that it could not readily be removed with a hand instrument and was partly removed with a bur. The tooth was vital and responded normally to temperature changes from air and water. He has had no discomfort from it whatever. By the time of the second view the layer of protective dentine had become so substantial that its factor of safety may be considered relatively normal and has continued so to the present time and doubtless will indefinitely.

SECOND CASE

Another very instructive case and one in which I had previously reported progress as indicated¹⁶ is that of a girl fourteen years of age who was brought for consideration of a program which involved the extraction of all her remaining teeth and the insertion of full dentures because of the very rapid dental caries from which she had suffered. An examination of her mouth in November, 1929, revealed that already eight perma-

nent molar teeth and one bicuspid had been extracted because of extensive dental caries. Nearly all of the remaining teeth had one or more cavities, some of them very extensive. The girl's health was not good and she had great difficulty in keeping up with her school work. A study of the dietary showed that this girl did not like milk and had been fed largely white flour products, sugar and syrup. Her favourite daily dish was pancakes swimming in syrup. Chemical and microscopic analyses were made of the blood, the saliva and the urine. We were amazed to find a very high level of albumen in the urine, namely, 596 mg. per hundred cubic centimeters, or about 0.6 per cent of the total volume of the urine. After changing the diet to an increase in dairy products and a decrease in carbohydrates, particularly sugars and starches, and with an addition of mineral and vitamin-carrying foods, the urinary albumen in one week's time, dropped to 67 mg., and, in a few weeks, the albumen had entirely disappeared from the urine and at the same time there was a marked improvement in the appetite and physical well-being. Under the changed dietary program in which additional vitamins were provided in capsule form, obtained from a high vitamin butter together with a few drops of a high vitamin cod liver oil, this patient during the next year did not develop a single new cavity and her physical well-being reached and remained at a high level. In this case the evidence is strong that there was a deficiency in both the minerals and activators or vitamins in the food. Some cavities which were purposely left unfilled did not have an extension of the caries. These cavities were later filled. She has continued in good health and is

free from dental caries and continues to be careful in the selection of her foods.

THIRD CASE

Another case which is particularly interesting is the following: In 1930 a girl of thirteen years of age was sent to me by her physician because of rampant tooth decay and also disturbance in physical development. At the time of my first examination ten open cavities were found notwithstanding frequent dental service by her former excellent dentist, the last sitting being only one month previously when six cavities were filled. A deep, highly sensitive cavity in the upper right first bicuspid had such deep caries that the pulp appeared to have been reached by the decalcification when examined roentgenographically. When placed on a reinforced nutrition which consisted of an increase in dairy products, entire cereals and sea foods together with an addition of fat-soluble vitamins with a reduction of the white flour and sweetened foods and pastries the dental caries was immediately controlled and has been kept so in all periods during which she was taking additional vitamins. A progressive change was shown in the roentgenograms. A layer of healthy dentine was progressively built beneath the apparent exposure of the pulp thus reducing the size of the pulpal cavity. During the intervening five years she has continued to reinforce her nutrition during the winter and spring months with the fat-soluble activators, discontinuing them during the summer. Roentgenograms consisting of at least bite-wings of the crowns of the molars and bicuspid have been taken usually every six months to check the condition of the teeth and supporting bone. In June, 1934, when

she graduated from high school, she had gone through the past year without the development of any new caries in her mouth, the last eight months of which, namely, from October, 1933, to June, 1934, she had been taking additional activators. The fat-soluble activators as usual were discontinued for the summer. When she returned in September, 1934, five new cavities had developed and one in a molar nearly reached the pulp. She was conscious of a marked lowering of her vitality. A careful study of the conditions disclosed that her appetite had been very poor for her evening dinner and her breakfast. The cause was readily found. During the summer she had a very companionable friend who enjoyed playing tennis with her, in which both were experts. Most of the afternoons were spent on the tennis courts. Between sets they would go to the soda fountain and enjoy refreshments which were very rich in fruit syrups. These accounted for the poor appetite for dinner since adequate calories had been received in the syrups. The evenings were spent in entertainment after which more rich ice cream sundaes were enjoyed. On returning she was very anxious to again take up the reinforcement with the activators because of being conscious of a greatly lowered physical efficiency. The result has been a complete control of dental caries.

DEVELOPMENT OF DENTINE

An important characteristic of the teeth of an individual who is not receiving an adequate quantity of minerals and fat-soluble activators in the daily nutrition is the delayed development of the dentine of the tooth with the result that the pulp chamber is abnormally large.

Some Phases of Preventive Dentistry

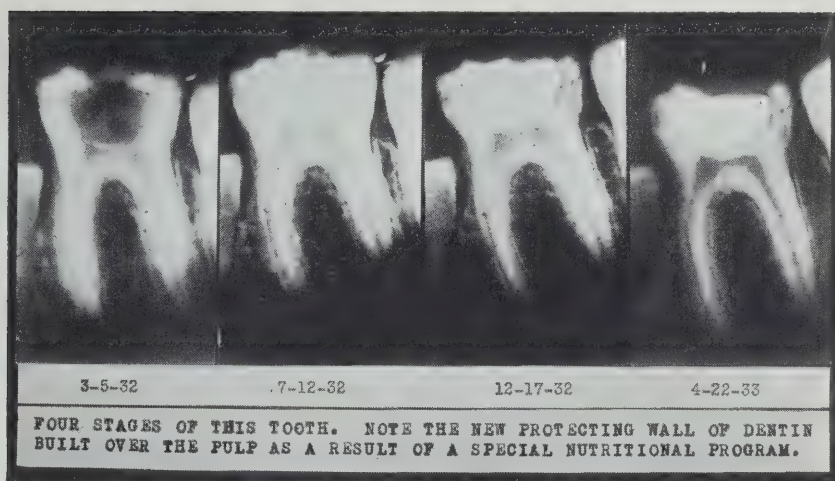


FIGURE 2

Under suitable nutritional reinforcement not only is decalcified dentine remineralized but pulps are induced to build a new protecting wall of normal dentine as shown in this case. A temporary filling was placed to protect the pulp from pressure.

This is associated with delayed mineralization throughout the skeleton in which there appears an abnormally large ratio of medullary matter to trabecular structure in cancellus bone such as the alveolar bone. When both the blood and saliva are normal this process of mineralization tends to proceed to a point of balance both at the pulpal surface of the tooth structure at its contact with the blood and lymph and at the surface of the tooth in its contact with the saliva. An increased amount of dentine is laid down as a protective procedure at the point of irritation. By this procedure even practically exposed pulps can rebuild a protecting wall provided the decalcified layer of dentine remains temporarily for protection and provided the pulpal tissues is not too seriously infected. This is illustrated in Fig. 2 in which will be seen the roentgenographic appearance of a tooth that was decalcified apparently to the pulp chamber. Owing to the sensitivity of the tooth a temporary filling was

placed and under the reinforced nutritional program a progressive thickening layer of dentine was built into the pulp chamber as a protecting wall. After this was well established the temporary filling was replaced with a more permanent restoration. This is one of a mission experimental group, children receiving one reinforced meal a day^{10 15}.

IMMUNITY

I have called attention in several instances to the fact that the teeth that have had active caries and for which immunity has been reestablished, not only have the caries come under control provided the saliva has access to the unfilled cavity but that these cavities show evidence of remineralization of the decalcified dentine, often with the formation of a smooth hard surface. It is of interest that these teeth when extracted and placed in silver nitrate solution are not penetrated by the silver salt as were teeth from the same mouth prior to the change



FIGURE 3

The decalcified dentine of typical caries in B and C has been remineralized by changing the saliva through reinforcing the nutrition. The caries was not removed. A, was extracted before treatment and shows the silver nitrate has penetrated the decalcified dentine.

in nutrition. This is splendidly illustrated in Fig. 3 in which will be seen three deciduous teeth with proximal cavities. The first from the left, A, was extracted before beginning treatment, B and C after. All were placed in silver nitrate solution. The decalcified dentine was readily penetrated by the silver nitrate before reinforcing the nutrition but not after, due to remineralization as shown in B and C.

Further evidence that the controlling factors for immunity to dental caries reside in the saliva are now readily demonstrable by a chemical procedure which I have developed and reported previously¹⁵.

Typical dental caries has never been produced without the presence of saliva and even crowns of teeth attached to artificial dentures may be attacked by typical tooth decay in susceptible mouths. No teeth have been made dirty enough to induce typical tooth decay outside of the mouth. Active caries promptly ceases with death. While the aciduric bacteria play a role, their action is rigidly controlled by the saliva, which provides the environment for the teeth. This control

has been shown by me to be associated with the behaviour of the inorganic phosphorus in its relation to an absorbent such as a finely powdered bone.

One phase of this is disclosed by shaking finely powdered dry bone in a sample of the saliva and noting its effect on the inorganic phosphorus level as compared with the untreated sample. In cases of high immunity the effect of the powdered bone is to markedly lower the reading of inorganic phosphorus. In cases of lost immunity or active dental caries, this reduction of inorganic phosphorus is greatly lessened or in very severe cases is increased. This phase follows the changes in immunity or susceptibility as produced clinically. This is typically illustrated in a mission experimental group, as shown in Fig. 4. This shows the progressive effect produced by providing one meal a day in which mineral-carrying foods and fat-soluble activators were reinforced for a mission group. It will be seen that an average group change occurred in the level of the inorganic phosphorus of the saliva, which progressed from a plus 2.48 to a minus 11.7.

In a group of eighty-two individuals suffering from active dental caries who received reinforcement of the mineral and activator-providing foods, in all of which there was complete control of dental caries, there was a shift in the per cent of the inorganic phosphorus of the saliva when shaken with powdered bone, from an average of plus 8.4 to minus 11.2. This is shown in Fig. 5. In a group of 119 individuals, including both severe and mild cases of active caries, the per cent change was from an average of plus 5 to a minus 12 as the result of reinforcing the nutrition.

Further evidence that this effect is due to the activating substances added to the nutrition is indicated by the changing of

this chemical characteristic of the saliva of individuals suffering from rampant tooth decay and showing a plus reading, by shaking the saliva for a few minutes with an activating substance, such as a high-vitamin butter or a high-vitamin animal fat, then separating them and noting the effect of this procedure on the inorganic phosphorus when the saliva is shaken with finely powdered bone. Twenty-seven salivas with a plus reading changed when treated from an average of 9.7 to a minus 6.1. Much additional data are available which space does not permit including.

The method used for determining inorganic phosphorus level of the saliva is as reported¹⁵ an adaptation of the stan-

PERCENT CHANGE INORG. P. WITH TREATMENT

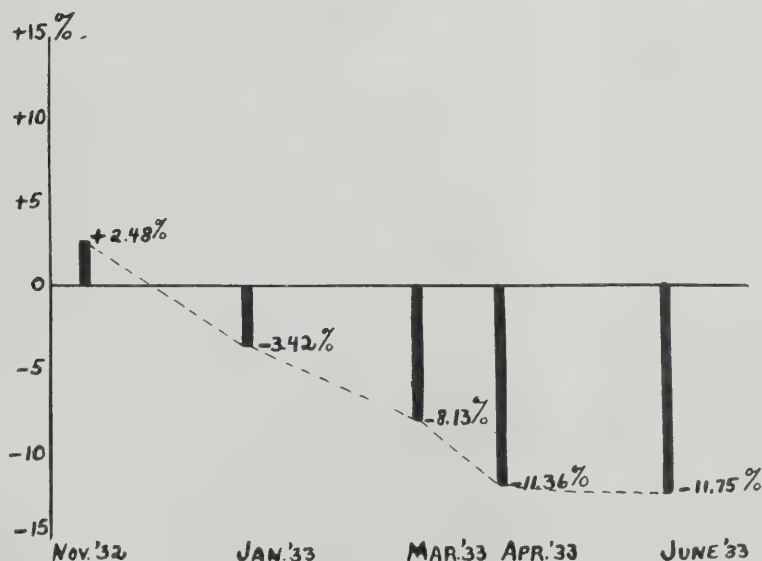


FIGURE 4

In cases of active dental caries, the inorganic phosphorus of the saliva behaves abnormally in the presence of finely powdered bone and moves progressively toward normal under treatment by reinforcement of the diet, and occurs simultaneously with the cessation of active caries.

PERCENT CHANGE IN INORGANIC PHOSPHORUS BEFORE AND AFTER TREATMENT

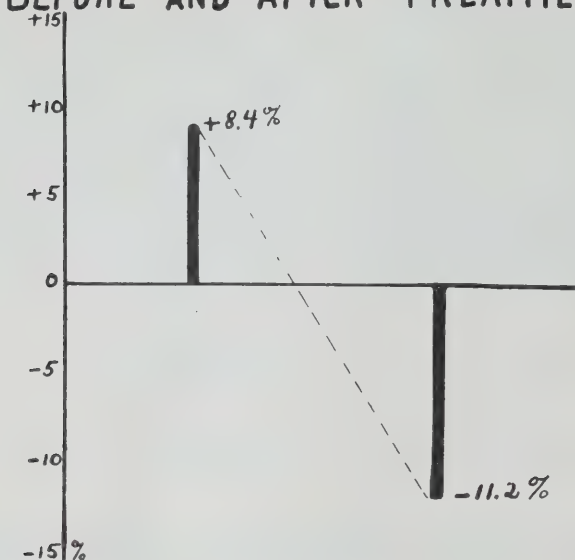


FIGURE 5

In a group of eighty-two individuals receiving a reinforcement of the nutrition, the inorganic phosphorus of the saliva changed from the characteristic of active caries to the characteristic of immunity, as shown.

nous chloride methods that have been developed by Kutler and Cohen¹⁷. The method I use for securing the saliva is by chewing a stiff wax, such as orange sticky wax used in bridge work, and collecting a quantity of fifteen to twenty cubic centimeters. Unless this is to be analyzed immediately an amount of formalin sufficient to make one per cent is added as a preservative. Since there is a very great difference in the quantity of contaminating material, chiefly foods, determinations are made on filtered salivas.

From each of the foregoing approaches to the problem of finding means for the control of dental caries the responsible factors seem clearly to reside in the nutrition and relate to adequate quantities

of minerals and fat-soluble activators. This does not imply that all the water-soluble vitamins are not also essential but rather that their absence has not been found to be one of the controlling factors.

Very extensive tables are now available particularly those of Sherman¹¹ dealing with the mineral content of a large number of food products. Data are also available regarding the acid content of the various foods. This makes possible a computation of the acid base balance of various dietaries both those that are efficient and those that are inefficient.

A study of the dental caries problem on this basis in the light of the dietaries that have been found to be adequate in the various groups of primitive racial

stocks as herewith reviewed, reveals that the efficient nutrition of the people in the isolated Alpine valleys, the Gallics of the Outer Hebrides, the Eskimos of Alaska and the Indians of the far north of Canada, all have marked excess of acid over base. Indeed they were more acid than the displacing diets, the use of which were attended with active caries. The efficient diet of the South Sea Islanders however had a preponderance of base over acid. This evidence can not be harmonized with the various discussions ascribing an alkaline balance as a controlling factor for the establishment and maintenance of immunity to dental caries.

MEANS OF REINFORCING

Since the controlling factors as indicated by the data herewith presented reside in the mineral and fat-soluble activator content of the foods, our first concern will be to provide means for reinforcing these factors in the general nutrition both as a means for arresting active caries and other degenerative processes resulting from their absence and also for the purpose of preventing not only the development of conditions which favour susceptibility to tooth decay by a reduction of the immunizing factors but also for the prevention of associated degenerations for the masses. Further, these factors require to be present in adequate quantity to prevent the development of facial and dental arch deformities and other physical deformities and injuries to the defensive mechanisms of the body in order that infections such as tuberculosis may not be able to obtain a foothold. The problem, therefore, resolves itself to reinforcing the nutrition with foods that provide minerals and activators in suitable chem-

ical form for ready assimilation. Since the fat-soluble activators include vitamins A, D and E and apparently some that are not yet identified, the question immediately arises whether or not synthetic preparations such as activated ergosterol as a source of vitamin D may not provide the requirements. While activated ergosterol does readily cause the healing of rickets in animals and humans and prevents this condition, it is important to note that deposition of minerals is far from being the sum total of the role that is played by fat-soluble activators. The problems involved in dental caries are far from being comparable to those which are involved in rickets. In the latter an important phase requires that minerals shall be deposited. In several degenerative processes it is quite as essential that minerals be retained in solution. Similarly there is a very great difference in the behaviour of different species of animals in the matter of the effect of activators. Sixty doses of viosterol have been shown to be required when given to chickens to produce the same effect as one rat dose of cod liver oil. Specially high vitamin butter has qualities not obtained by either.

When we review the efficient dietaries of the above caries immune primitive racial stocks, while having in mind the mineral and activator content of their various foods, we find that for the Swiss the fat-soluble activators were provided in adequate quantity and quality from the butter-fat of the milk as it was produced in the high Alpine valleys. The milk was a rich source for all the minerals while rye became an important additional source of phosphorus and other essential factors. The entire rye bread was used liberally together with

the summer made cheese which contains the full butter-fat. For the people in the Outer Hebrides the fat-soluble activators were provided in the sea foods. Neither of these groups had much fruit or green vegetables, the latter being limited to the summer. For the Eskimos of Alaska the sources of fat-soluble activators were provided liberally in the seal oil, fish and the organs of the larger animals of the sea which are used liberally. They had no cereal and exceedingly little plant foods and almost no fruits. For the Indians of the far north in Canada the food supply was limited almost entirely to the wild animals of the chase chiefly moose and caribou. They did not eat meat, however, as is the custom of modern civilization. The organs, viscera and various glands, brains and eyes were routinely eaten, and supplemented by muscle meat. For them the fat-soluble activators were provided by the storage organs of the wild animals. Exceedingly little fish was used in the foods of many of these plateau Indians who enjoyed exceptionally high immunity to tooth decay. For the inhabitants of the South Sea Islands the fat-soluble activators were liberally supplied by the small animal life of the sea. For each of these groups the mineral content of the diet was exceptionally high. The chief source of phosphorus which is usually one of the most difficult minerals for the humans to obtain and the one most frequently found to be diminished in the case of loss of immunity, was liberally provided in both the dairy products and the rye for the people in the Alps. These minerals were in the oats and sea foods for the people in the Outer Hebrides. They were in the sea foods used by the Eskimos and in the

animal tissues used by the Indians. The various minerals, particularly phosphorus, were liberally supplied in the animal life of the sea used by the South Sea Islanders.

NO SINGLE DIETARY ESSENTIAL

It is accordingly, indicated that no one single dietary is essential for maintaining a high immunity to dental caries. It is clearly not necessary that any group of our modern civilization must adopt rigidly the dietary programs of any of the above primitive racial stocks. It is only necessary that their nutritional program shall be made equivalent in fundamental food factors to those various dietaries, since they practically all resolve to the same chemical basis as previously shown.

FOR CANADIANS

For the people of Canada some very important phases of this problem should be considered.

I have previously shown in the communication which was published in *ORAL HEALTH*¹⁶, and therefore made available for the dental profession of Canada, an extended discussion entitled *NEW LIGHT ON SOME RELATIONSHIPS BETWEEN SOIL MINERAL DEFICIENCIES, LOW VITAMIN FOODS AND SOME DEGENERATIVE DISEASES, INCLUDING DENTAL CARIES, WITH PRACTICAL PROGRESS IN THEIR CONTROL*, data which clearly indicates that an increase in several degenerative processes, including dental caries and arthritis, is being associated with progressive depletion of the mineral content of the soil. Dr. Robert S. Osgood and Dr. Russell L. Cecil have recently reported as follows:

"New Haven, Sept. 18, 1934—

Chronic rheumatism leads cancer, tuberculosis and heart disease, in some States causing more disabilities than the three deadly diseases in Massachusetts."

I have shown in that communication that since, on an average, only one-thousandth part of the earth's surface is phosphorus and that the top seven inches being the depth to which farms are usually cultivated it will contain only enough phosphorus for about one hundred crops of either wheat, rye, oats or barley. For a large part of the Eastern Provinces of Canada, as well as New England this number of crops have already been taken with the result that the soil in very many districts is seriously depleted. This is particularly true of all those districts which are underlaid with limestone and quite seriously true in those districts underlaid with granite. The virgin soils that were available when the forests were first removed were very rich and the first few crops were very high in nutritive value. It has now been shown that the level of the vitamins in the plant tissues are related to the levels of the minerals in the plants which in turn are controlled by the minerals in the soil. Each of the early settlers while breaking up the new land kept milch cows and these had splendid pasture. The farmer had a varied enterprise producing milk to send to the factory, raising his own wheat and oats on the splendid new soil and raising excellent hay for his cattle for the winter. With the changes in the method of farming, and in the efficiency of the farm land, due in part to solution and drainage of the valuable minerals from the soil and in part to cropping, it became necessary to change the whole principle of farm en-

terprise. Beef cattle were pastured and shipped to market. Special crops were planted. The result is that for many of the Canadian people as well as for residents in many other countries it became necessary to buy bread made from refined white flour imported into the district instead of having the local wheat crop ground at the mill. A marked lessening occurred in the use of milk which is the chief natural source of fat-soluble activators for the interior community and also the principal natural source for several of the minerals. While vegetables are usually liberal sources of calcium they are not liberal sources as a group for phosphorus. With this change there has been an increasing use of high energy foods in the form of highly sweetened canned fruits as marmalades, jams, etc. Neither the farmer nor his dentist has suspected that it would be necessary for the boys and girls as well as adults to consume 32 pounds of marmalades or jams per day to get enough phosphorus for one day. This, of course, would be utterly impossible both because of bulk and because of its high energy or calories content amounting to 32,000. Syrups and honeys are equally highly deficient in minerals and excessively high in calories. Refined sugars are entirely lacking in minerals and activators, yet they provide on an average approximately 25 per cent of the daily energy for many American and Canadian people. The result of all of this has been a progressive deterioration of the family stock as is so clearly evidenced by the increasing number of facial deformities, irregular dental arches, rampant tooth decay and premature physical degeneration. This is not a Canadian problem, it is a world problem but has some unique phases for each indi-

vidual community. Probably every Canadian and American dentist has frequently heard his patients remark about the good teeth of their parents or grandparents. They were reared through their formative and growth periods largely on primitive soil still rich in the minerals provided by decayed plant tissues.

As Nature has provided the nutritions for the primitive racial stocks there has fortunately been a very liberal supply of favourable foods. In the sea for the dwellers by the sea, but sea foods are not readily available for daily consumption in large volume for the great mass of people in a vast interior country. For these areas Nature's method was to provide the limited number of human occupants with a superabundance of wild game such that the storage organs were available for continual and liberal use. But we can not kill our herds of dairy cows to eat their livers, hearts and kidneys and still have them as a continuing source of our activators. Since some animals have the capacity of supplying additional vitamins and minerals in their products such as the eggs of birds, milk of dairy animals, these have also become available sources for residents of interior countries. It is for this reason that the United States maintains approximately twenty-five million dairy cows or one for every five of its population. But here again we have been defeating Nature by providing the dairy cow with the foods that would enable her to produce a large volume of milk and even a large quantity of butter-fat in the milk without providing her with an adequate source of the pro-vitamin materials from which she will make her fat-soluble vitamins. These are not found liberally in cereals and ordinary concentrates as so largely used

for supplementing dairy animal food. They are provided chiefly in rapidly growing young plants which can be used either fresh or dried quickly and stored and used for winter feeding. The best dairy animal food that I have found for producing milk rich in fat-soluble vitamins was rapidly growing young wheat and next rapidly growing rye or oats. The herbivora have high efficiency for synthesizing vitamin A from carotene which is liberally provided in rapidly growing young plants. A deficiency of vitamin A retards growth and marked deficiency produces eye involvement, hence its name the antixerophthalmic vitamin. During the severe drought of the summer of 1934, out of approximately 28,000 head of cattle that were moved into Ohio from the West 8,000 were reported to be blind, apparently directly related to an inadequate source of provitamins for building vitamin A. Cows that were nursing their calves and growing calves were said to be worse affected.

CANADIAN DAIRY PRODUCTS

I have previously reported progress in a very extensive investigation that I have been carrying on for eight years on the relative and actual level of the fat-soluble activators in dairy products in various parts of many countries of the world. I have shown, and the samples are continually demonstrating, that while there has been found to be a seasonal cycle in each district, there is a very great difference in the height of the peaks in various communities. It is of interest that for my experimental work most of the high vitamin butter that I secure is obtained from the Canadian northwest. In a few states in the United States a good quality is produced for short periods.

Some Phases of Preventive Dentistry

The great wheat plains of the Canadian Northwest will doubtless some day be one of the great manufacturing centres of life-giving fat-soluble activators for other countries as well as for all of Canada, just as it now is a liberal source of wheat for flour.

It has been demonstrated by the Experimental Station in Kansas that winter wheat sown in August can be pastured during the autumn and early spring and into May in that state, and not reduce the wheat crop more than from two to five bushels per acre.

Butter of highest quality as a source of these fundamental factors for life, will in very small quantities enhance the process of body building as I have shown. The total income that can be produced for a given area of suitable lands will doubtless some day be very much greater because of the high intrinsic value of a high vitamin butter by using the land largely for pasturage of wheat rather than using it for producing wheat for flour.

CONCLUSIONS

Our citizenship must come to recognize that the price we pay for highly refined flour by the process of removing usually about four-fifths of the minerals and most of the embryo, is not Nature's plan and is not justified. Animal life is the product of Nature's natural foods. It is entirely feasible for freshly cracked entire wheat to be made available for use as a cereal and as freshly ground entire flour for baked goods. It is only essential that the wheat be freshly ground when used because of rapid deterioration of the embryo or germ.

For Canada her vast stretches of sea-shore and inland waters provide a very important source for both mineral and

activator carrying foods. The problem resolves itself largely into utilizing those great storehouses of Nature's richest source of human nourishment, adequate for maintaining the highest standards of physical excellence.

In my clinical work I am able to control the most active cases of dental caries by reinforcing the nutrition with mineral carrying foods as noted above, and with a half teaspoonful three times a day of an extra high vitamin butter oil, (separated from a very high vitamin butter by centrifuging after melting and chilling), and cod liver oil and maintain without difficulty immunity to dental caries with two-thirds of this amount. If this is taken in capsules, this amount is provided by three naught size capsules with each meal for three meals a day for controlling active caries, and with two capsules with three meals a day as a preventive program. It is always requisite, however, that the dietary be reinforced with mineral carrying foods, not with mineral concentrates such as dicalcium phosphate, calcium lactate, etc. Our systems require that the calcium and phosphorus, etc., be developed in the plant tissues and taken into our bodies in a form in which they can make combinations in the tissues rather than being taken into the digestive tract already combined.

The problems we have been discussing are infinitely more important than even the incidental industrial depression, for the way in which these problems shall be met will largely answer the question whether our civilization will progressively degenerate or will progressively improve physically toward Nature's best standards of excellence.

While checking the destruction of our

own civilization by abandoning our deficient foods, we should stop sending chiefly white flour and sugar in exchange for furs, to the unsuspecting Eskimos and Indians, whose races are so rapidly being exterminated.

This is a challenging program for the Canadian Dental Association and its new JOURNAL, but not too great a task for Canadians.

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REPORT OF THE RESEARCH COMMITTEE OF THE CANADIAN DENTAL ASSOCIATION

By ROBERT J. READE, D.D.S., Toronto, Ontario, (*Chairman*).

The committee during the past year has been planning to initiate a research regarding the calcium mechanism of the body, to determine whether or not the mineral content of the hard tissues of the teeth are in the nature of a reservoir which may be drawn upon under conditions of an unfavourable metabolism.

The result of the research may suggest other conditions which may have a profound effect on the views now entertained regarding the process of decay of the teeth, and also suggest reasons for the periodical onset of decay.

The research would endeavour also to ascertain if the mineral content of a tooth alters after the tooth has reached maturity.

The object of the committee is not only to gain information, but also to interest and help and educate dentists qualified for research work. After much consideration, it was thought best to carry on the work through an authorized dental department, so the dental department of the University of Toronto was approached. The dean, Dr. Wallace Seccombe, heartily approved of the effort and gave it active support. In this way, through the dental department, a contact was made with the research department of the University of Toronto. It was considered advisable to work with the department under the able supervision of the well-known research worker, Dr. Arthur Ham, and thus have available all the facilities of the University.

This research was made possible by a generous donation from the A. Wander Company, Manufacturing Chemists, with head office in London, England. They have works and laboratories also in Peterborough, Ontario, where Mr. Charles Shaw is general manager. One of the well-known products of this company is: "Ovaltine".

As the work proceeds, progress reports will be made available.

HARMFUL EFFECTS OF SODIUM PERBORATE PREPARATIONS

By CHARLES H. M. WILLIAMS, D.D.S., B.Sc. (Dent.), Toronto, Ontario.

THE widespread use of sodium perborate preparations as mouth-washes and gargles has introduced a new problem of diagnosis and treatment for the dental profession. It has apparently been assumed in the past that the employment of a solution composed of one teaspoonful of the sodium perborate preparation in a glass of warm water could not produce any harmful effects on the tissues of the mouth. More lately however, Hirschfeld¹ and Snell² have mentioned the escharotic action of these preparations in the mouths of some people. The writer feels that a description of the symptoms and treatment of these new and rather common lesions should be of value to fellow practitioners.

SYMPTOMS

The most common subjective symptom is a burning sensation in the oral mucosa either constantly or only at the time of rinsing with the solution. In milder cases the patient may complain of a drying, puckering or tingling sensation of the mucous membrane surfaces of the mouth.

The objective symptoms are characteristic of chemical burns of the mucous

membrane which follow the use of escharotics such as mild solutions of silver nitrate or phenol. The severity of the symptoms may vary from a very slight to a marked degree.

The reactions of the various surfaces of the oral cavity differ, and they are therefore described under four main headings as follows:

- (a) Mucous membrane surfaces of cheeks, lips, sub-lingual area and soft palate.
- 1. The inflammatory colour reactions are often striking and may range



CHARLES H. M. WILLIAMS

from crimson to a markedly cyanotic or purplish shade. There are occasionally strips or patches of white slough which are easily removed.

2. The cheeks, lips, sub-lingual glands and soft palate may be enlarged.
3. These surfaces may be tender to touch.
4. Bleeding is not easily produced.

(b) Dorsal surfaces of the tongue.

1. The most striking effect on the tongue is the frequent production of the so-called hairy tongue. In this condition a mat-like patch of long hair-like papillae is formed about the mid-line of the posterior half of the tongue. These "hairs" may assume a length of one-half inch. The brownish or blackish colour, which is a characteristic of the condition, is the result of the entanglement of food debris, desquamated cells and bacteria in the matted surface of the area. A sourish, foul odour often emanates from this source. The area so involved is usually not sensitive but the patient may complain of the unclean and slimy thickened surface.
 2. The tongue may be enlarged and exhibit indentations from contact with the teeth.
 3. The anterior half of the tongue may be fissured and some of the papillae at the tip are sometimes enlarged, reddened and sensitive.
- (c) The outer surfaces of the lips.
- The lips are frequently thickened, dry, sometimes fissured and frequently exhibit symptoms of tenderness, ranging from a mild tingling to a marked soreness.
- (d) The alveolar mucosa, gingiva and hard palate.

These surfaces often exhibit an evenly distributed cyanosis and slight swelling; but the most striking effect on these surfaces is the occasional production of discreet ulcers, pin-head in size and excruciatingly sensitive to touch. These ulcers are most commonly formed on the alveolar mucosa or cemental gingiva which simplifies differentiation from infective gingival ulcers, which usually occur on the gingival margin. This symptom seems to be more common when the sodium perborate is being used on the tooth brush as dentifrice, so that it is possible that the traumatic influence of the sharp crystals of the powder is a factor in producing these ulcers.

CAUSE

The explanation for the escharotic action of some sodium perborate preparations is likely to be found amongst the following suggestions:

1. Sodium hydroxide (caustic soda) is used in the commercial manufacture of sodium perborate and it is possible that sufficient of this caustic material may remain, as an impurity, to produce an escharotic effect when used in the mouth.
2. The essential oils which are so freely used in flavouring sodium perborate preparations, are irritating to mucous membrane surfaces. Prinz³ mentions a "mouth-wash eczema" caused by essential oil flavourings.
3. Hirschfeld¹ states that about "20% of patients cannot use the drug stronger than a teaspoonful to three-quarters glass of water without sustaining a burn of greater or less degree". He apparently intends to indicate that the

Harmful Effects of Sodium Perborate Preparations

harmful effect is produced by the sodium perborate itself. Further investigation will likely be necessary to reveal the true cause of the harmful effects observed.

TREATMENT

The treatment is confined to removal of the cause. Some mildly saline or alkaline mouth-wash may be substituted for the sodium perborate. During the healing period especially any mouth-wash used should be in a tepid state, but never hot. The application of strong drugs such as iodine, phenol or silver nitrate to the ulcers, aggravates the condition and is contra indicated.

Following the cessation of use of sodium perborate disappearance of the symptoms takes place rapidly and the mouth appears normal within two to four days.

The following case histories serve to illustrate the sequence of events in typical cases of this nature:

CASE 1. J. P., MALE, AGE 22

History. Four days previous to presentation, had begun to use a new stiff tooth-brush and had produced a traumatic ulcer of the alveolar mucosa and gingiva over an upper cuspid tooth. Since another member of his family had used sodium perborate as a mouth-wash during an attack of necrotic gingivitis (trench-mouth), he began to employ the usual solution of one teaspoonful of the powder to a glassful of definitely warm water. This solution was used with increasing discomfort from four to six times daily for the four days previous to presentation.

Symptoms. At presentation the patient was constantly aware of a burning sensation involving the entire mucous mem-

brane of the mouth. The discomfort was intensified when the warm solution was used. The entire mucous membrane of the mouth exhibited a brilliant inflammatory colour reaction. There was a medium cyanosis. A few shreds of sloughing epithelium were evident on the inner surfaces of the lips and cheeks and in the buccal folds. The cheeks were thickened and showed indentations from the teeth. The tongue was swollen and indentations along the edges indicated the pressure of the tongue against the teeth. A large traumatic ulcer was present over the upper left cuspid. All of the mucous membrane surfaces were sensitive to touch. The lips were swollen, dry and slightly fissured.

Treatment. Discontinuance of the use of sodium perborate solution was ordered and a mildly saline mouth-wash was substituted. No other treatment was applied and disappearance of the symptoms occurred in three days.

CASE 2. M. F. FEMALE, AGE 32

History. Patient presented with an advanced chronic simplex periodontitis. Because of the unhygienic and infected condition of the mouth a prescription composed of sodium perborate, sodium oleate and essential oil flavourings was given to the patient with instructions to use it as a mouth-wash three to four times daily. The usual proportion of one teaspoonful of the powder to one glass of warm water was employed.

Symptoms. At the next sitting, nine days later, the patient complained that the tongue felt thick and "like a plush carpet" on its upper surface. There was no tenderness. Clinical examination revealed a typical brown, hairy, tongue which was slightly enlarged. There was no definite evidence of involvement of

any of the other surfaces in the mouth.

Treatment. A mild saline mouth-wash was substituted for the sodium perborate preparation and the tongue resumed a normal state in four days.

SUMMARY

1. Sodium perborate preparations occasionally exhibit escharotic effects on the oral mucous membrane when used as a mouth-wash or dentifrice.
2. Especially distressing lesions sometimes result when sodium perborate is used as a dentifrice.
3. The escharotic effect may be an evidence of idiosyncrasy to sodium perborate on the part of the patient; but it is more likely the result of impur-

ities in the sodium perborate, or the employment of strong essential oil flavourings.

4. The symptoms exhibited by the oral mucosa are characteristic of the results of chemical burn.
5. Healing takes place rapidly when use of the preparation has been discontinued.

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Medical Arts Bldg.

THE COULTAS CASE

OUR readers have been following with much interest the litigation of the College of Dental Surgeons of British Columbia against Dr. Coultas, for unprofessional conduct. This case came before the Supreme Court of Canada early in May and the appeal was unanimously allowed against Coultas, thus reversing the decision given by the Appeal Court of British Columbia. The Council

of the College was upheld, therefore, in its decision to suspend the license of the said Dr. Coultas for six months for unprofessional conduct.

The dentists of British Columbia have been fighting for the rights of all ethical dentists in Canada, and are to be congratulated upon bringing this case to a successful conclusion.

DENTAL CONVENTIONS

AMERICAN DENTAL SOCIETY OF EUROPE—July 31-August 3, in London.

FOURTH BELGIAN NATIONAL DENTAL CONGRESS—August 1-4,
in Brussels.

THE 29TH SESSION OF THE INTERNATIONAL DENTAL ASSOCIATION—
August 4-10, in Brussels.

ELEVENTH ANNUAL MONTREAL DENTAL CLUB FALL CLINIC—
Oct. 17-19, Mount Royal Hotel, in Montreal.

AMERICAN ACADEMY OF PERIODONTOLOGY—Oct. 31-Nov. 2,
in New Orleans, La.

DENTISTRY — AND SOMETHING ELSE

By HARRY S. THOMSON, D.M.D.

"To do one thing well is to be distinguished; to do more than one thing well is to be a genius."

YOU wouldn't think that a circus coming to town could make such a difference, but it did. It entirely changed one boy's life plan. He was going to be a circus performer, a tight-rope walker, the best tight-rope walker the world had ever seen. He wasn't going to carry a balance pole; nor was he only going to walk—he was going to dance on a rope.

At last the circus day arrived. For weeks the boys had been entranced with the posters, showing the celebrated family of equestrians, the beautiful girl on the flying trapeze, the biggest hippopotamus in captivity, and the hundred and one other attractions that circus posters shout aloud. Of course, all the boys could not afford to go to the circus, particularly the gang of which our future tight-rope walker was a member, but there was one consolation. The posters said there would be a grand free open-air concert—*free*—on the circus grounds, immediately after the big parade, at which Pippo, the Italian light-weight tight-rope walker, was going to perform.

The free show was on, and every member of the gang was there — eyes staring, mouths open. Pippo was a little disappointing; he did not dance, and he carried a balance pole. He seemed to be having a little difficulty, and did not do

anything wonderful at all—so said our hero, the future circus performer. When the show was over a decision was made that all of those who could not go to the big show would hold a circus in the barn at home, and the chief attraction would be a real tight-rope walker *without* a balance pole.

Two-thirty, and once again "the show was on". They did not have a rope, so had to borrow one from Mrs. Trudeau next door. The rope was stretched from the barn to a neighbouring tree. Our hero ascended and stepped out on the rope without a balance pole. The gang cheered as he was half way to the tree. He was doing better than Pippo—much better — when suddenly the rope broke and the boy fell to the ground in a heap.

The doctor said he would have to stay in bed for months with a plaster cast on his leg and hip, for the hip was broken. The gang came in laden with sorrow and books. (It was the books that made the difference.)

So that is how the circus changed one boy's entire life plan. Fate had decided that he was not to be a circus performer but a dentist, one of the most outstanding dentists in all Canada, and later to become Vice-Dean of the Dental Faculty of the University of Montreal. Last year he was tendered a banquet by his uni-

versity and professional confrères on his fiftieth anniversary in dentistry.

During those weeks in bed the boy found out that there were many other things he could do. He discovered that he could draw and paint, and some of his pictures have been hung in Canadian art exhibits. He also discovered that he was a poet, and two of his books of poems have been published.

This is the early story of Dr. Joseph Nolin, Professor of Preventive Dentistry, Professor of Operative Dentistry, and Vice-Dean of the Dental Faculty, University of Montreal, whose photograph appears as the frontispiece in this issue of the JOURNAL. Early in his professional career Dr. Nolin was inspired with a vision of what Preventive Dentistry meant to the general public, and to this end he has devoted a great part of his life.

In 1927 he was appointed by the College Board as a member of a Commission to make a study of Public Dental Health throughout the world. On this mission he visited all the dental educational centres in the United States and Canada and submitted a comprehensive report to the Quebec Government covering details of the activities along Public Dental Health lines in the various centres, and made suggestions for a concrete program for his province.

Dr. Nolin is a past-president of the Canadian Dental Association, and is also president of the Hygiene Committee of the Montreal Catholic School Board. He

is a member of the Board of Education of the city of Montreal, and in that capacity has been responsible for the inauguration of a milk distribution to undernourished children in the schools.

Dr. Nolin, in early life, became a great admirer of Dickens, both the man and his work, and has lectured to many audiences in Canada and the United States on Dickens and his contemporaries.

Dr. Joseph Nolin was born in St. Johns, Quebec, and attended Ottawa University, Laval University Montreal, Philadelphia College of Dentistry and the New York College of Dentistry. He was one of the founders of the Dental Faculty of Laval University, Montreal Branch, which later became the University of Montreal, and occupied the chair of Operative Dentistry and Bridge Work.

In 1892 Dr. Nolin married Luciana Boucher, and has four children, two sons and two daughters. One daughter inherited her father's artistic ability and has achieved success as a sculptress.

Dentistry can well be proud of Dr. Nolin and his achievements. He is an artist, a poet, and a *littérateur*. He is also an outstanding public speaker. The Government of France has conferred on him the honour of making him an "Officier de l'Instruction Publique de France". He is a citizen and a dentist of more than usual ability, who is loved and revered by his confrères throughout all of Canada.

"Little minds are tamed and subdued by misfortunes; but great minds rise above them.

—Washington Irving.

THE FORUM

SOME OLD ENGLISH DENTISTS :

By The Honourable WILLIAM RENWICK RIDDELL, LL.D., D.C.L., F.R.Hist. Sec., &c.

DENTISTRY as a Profession is comparatively modern, although the practice is about as old as humanity itself. In this paper, it is proposed, to give some account of practitioners of Dentistry in London in the olden time—empirics, quacks, as they may be and have been called.

The first record we have of such a practitioner is in the time of Charles II, an "Oxford Doctor", who at the *Angel and Crown*, advertised marvellous pills, and "He draws teeth or stumps with ease and safety." About the same time, that is in 1664, there were advertised "Small Baggs to hang about Childrens necks, which are excellent both for the prevention and cure of rickets and to ease children breeding teeth," prepared by "Mr. Edmund Buckworth . . ." So, too, at the same period, "Major" John Choke advertised "*Miraculous Necklaces*, for easing children in breeding teeth and cutting them without pain . . . The best time to put them on is when they are two months old, and to wear them until they have bred all their teeth." A little later, a "Famous High-German Doctor . . . keeps an operator who cleanses the teeth and makes them white as ivory, extracts aching teeth *with a touch*, fastens loose teeth and sets in artificial teeth as if they were natural." One joker "was . . . three years Oculist to the German

Spread-Eagle, and seven years Operator for the Teeth to the King of Spain's White Elephants," but he had "infinitely improved that great traveller, Major John Choke's famous Necklace for breeding the teeth."

Toward the end of the seventeenth century a "gentlewoman" had a Rare Dentrifice Powder and Water for the Teeth to make them white as Ivory, as well as "a fine Lip-Salve"; and in 1698, Frederick van Neurenburg, drew "rotten teeth and stumps with a touch": while another High-German Operator, John Schultius, "draweth broken teeth and sets in artificial ones in their room, as firm as if they were natural, so that you may *eat to bite* with them"; and "He hath also brought with him, all sorts of smelling and well-tasting Teeth-Powder, to clean the teeth and make them white." David Perronet who called himself a surgeon, sold his "Universal Dentrifice which made black teeth as ivory, and a sure and speedy remedy for the worst Teeth-aches from such as be hollow and rotten: for be they never so raging or of long continued, this remedy will presently cure it by *Killing the Worm* in it": and another practitioner of the same kind, called Edward Comport "Letteth Blood and Draweth Teeth Dextrously for what you call for."

Coming to a later day, in 1776, Mar-

tin von Butchell advertised "Real or Artificial Teeth from one to an entire set, with superlative gold pivots or springs: also gums, sockets and palate formed, fitted, finished and fixed without drawing stumps or causing pain." (He, by the way, was the man who had his wife embalmed, arrayed in fine linen and lace, placed in a case with a glass lid and so kept in his sitting room: he usually introduced the embalmed wife to his visitors as his "dear departed".)

The last to be mentioned here is, "Patence, Dentist and Physician to several of the Royal Family," who was the inventor of a "Universal Medicine on Supreme Pills" which cured everything from Consumption to Piles: he, in 1771-1776, advertised himself as "Patence, whose works, cures and operations form his supremacy over every dentist in the

Kingdom, also all physicians, curing man, woman and child, when no one of them can give relief: demonstrates by his daily replacing black, nauseous teeth, with those comprising six different enamels, which are warranted never to turn black." And he tells of a lady who applied to him with her jaw-bone broken, by having a tooth extracted by another lady: she had a sound front tooth in her hand and two others ready to drop from their sockets, but he put them all back.

All this and much else that is interesting will be found in a somewhat curious book, published a few years ago by the Brentano's Limited, intituled "The Quacks of Old London", by C. J. S. Thompson.

Osgoode Hall, Toronto, February 22, 1935.



THE NERVOUS EX-SOLDIER WHO HAD AN APPOINTMENT WITH HIS DENTIST FOR GAS

(Reproduced by permission of the Proprietors of "Punch".)



PRINCE EDWARD ISLAND



W. T. Wye, Charlottetown

Editor—M. H. GARVIN, Winnipeg

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THE PRIMITIVE PEOPLES OF CANADA

A challenging program for the Canadian Dental Association and its new Journal is outlined in Dr. Price's excellent and timely manuscript entitled "Some Phases of Preventive Dentistry of Special Concern to Canadian Dentists," concluded in this issue.

He discusses the dietary problems facing the Canadian people and particularly Canada's primitive peoples, the Indian and the Eskimo, and asserts that the way in which these problems are met will answer the question largely as to whether our civilization will progressively degenerate or progressively improve. A very important approach to the problem of conservation of the primitive races of our great country is offered.

In a personal communication Dr. Price points out that the far north of Canada, and much of the central part as well, is adapted only to the fur industry and wild animal growth and not to modern industry, and that it will be important always to maintain a racial stock that is adapted to the living conditions required by that climate. He points out further that since the dental caries problem is only one of the evidences of breakdown, though one of the most important and most easily recognized, the responsibility, in a considerable measure, falls directly upon the dental profession of Canada.

Are we ready to meet the challenge that this implies? There is offered to the Canadian dental profession the opportunity of assuming leadership in the important matter of the conservation of the Indian and Eskimo as a national welfare problem, as well as the equally important responsibility in regard to the control of dental caries for all other groups. Since all Indians in Canada are wards of the government, any suggestions as to improved conditions and methods of treatment would have to be dealt with by government departments. It is quite feasible, however, for us to champion such an undertaking and to provide leaders who would co-operate with government authorities in dealing with these problems.

The very weight of the influence of four thousand dentists who are also citizens, united in a common purpose, would command at once the favourable governmental consideration and the active participation that the situation demands.

Such a vision and such an understanding would be of inestimable value to the profession as well, preparing us for better service and leadership in our country.

Through our Journal, we hope to weld our membership into a unit which can accomplish anything of value it undertakes; and so we bespeak for our Journal and our Canadian Association the most hearty support of every dentist from coast to coast.

There are 108,000 Indians in Canada, some dependent on industrial employment, some on agriculture, and others in the most remote parts on hunting and fishing. The hunting Indians located nearer civilization are faced with a difficult problem, owing to the depletion of the fur-bearing animals which results from competition with the whites.

Among the Indians in southern parts, ulcer of the stomach, constipation, and appendicitis are very common. However, it is interesting to note that the organic diseases such as heart disease, diabetes, chronic kidney conditions, and cancer, are not major causes of death among Indians as they are among white people. It would be interesting to study this problem from a scientific standpoint. On the other hand, the tuberculosis death-rate among Indians is many times higher than that among the white population. In Manitoba the tuberculosis death-rate among Treaty Indians is fourteen times the rate for the province as a whole and twenty-four times the rate for the white races.

The hunting Indians live on fish, rabbit, deer meat, bear meat (meat usually boiled), and, when obtainable, white flour biscuits, lard, and tea. The Indians on the Reserves consider they are starving unless they have white bread and tea, and if this is available little else matters. Much might be written about the unhygienic conditions and the deplorable dental conditions and the difficulty of educational work along these lines, but when one remembers that it is just fifty years since, as savages in the Riel Rebellion, the Indians were scalping the whites, the problems referred to are not to be wondered at.

Editorial

The Department of Indian Affairs looks upon the dentist as a specialist. Indians who have dental conditions beyond the capacity of their medical officer to deal with are referred to the dentist. When the medical officer and the Indian agent consider it advisable to bring a dentist into a school, the Department arranges with some local dentist for this service. In common with other services, dental work has been limited during the past several years by lack of available funds, but some work has been accomplished every year. In many cases the Department has been unable to do all it would like to have done.

The fees usually paid for individual work are \$1.50 for the first tooth extracted and 50 cents for each subsequent tooth at the same sitting. The cheaper sort of fillings are provided and the fee allowed is \$2.00 per tooth. When dentures are furnished, which unfortunately is not often, under present circumstances, the dentist is allowed \$20.00 for each denture. All these fees have been subject to a 10% reduction during the past two years.

When a dentist is brought into a school he is usually compensated by the day at the rate of \$30.00, which covers his professional services and the supply of ordinary materials. He is required only to do extractions and the cheaper type of fillings at this rate.

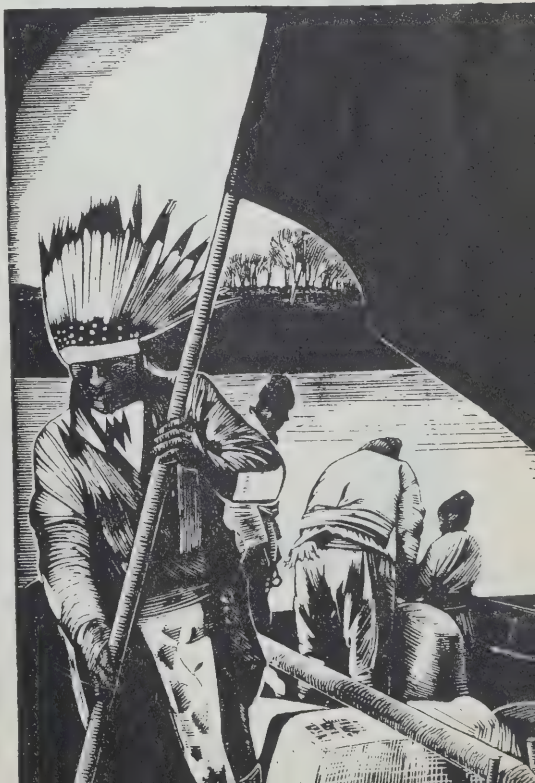
Formerly and still occasionally, arrangements are made whereby a dentist on school work is paid at the rate of 25 cents for extraction and \$1.00 for a filling. Under this plan he can earn approximately the same as when paid a daily fee. This method of compensation is unpopular among dentists, and the Department is abandoning it.

Much might be said about the Eskimos but that must wait for another time. Obviously the dental profession of Canada faces a great challenge in the health of these primitive peoples.

We urge the dentists of Canada to consider this problem seriously and to attack it with a determination to solve it successfully.

Health is the vital principle of bliss.

Wood cut by Walter J. Phillips, R.C.A.
Reproduced from "Dreams of Fort Garry"
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NEWS FROM THE PROVINCES

ONTARIO

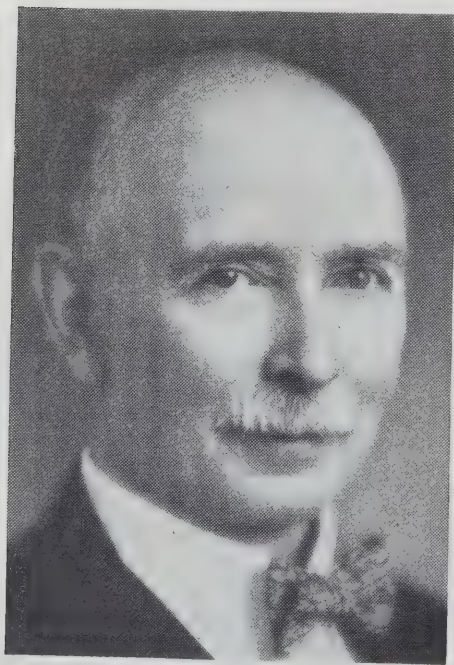
Dr. McDonagh Honoured. More than 200 friends of Dr. Andrew J. McDonagh tendered him a testimonial dinner on May 14th. Dr. Gordon McLean, the Chairman, was supported at the head table by His Honour Mr. Justice Kelly; Judge Lee; Dr. Wm. Magner of St. Michael's Hospital Staff; Dr. Russell Bunting, of Ann Arbor; Dr. Austin F. James, of Chicago; Col. W. G. Thompson, Director of Dental Services; Dr. W. J. Bell, Deputy Minister of Health; Dr. W. J. Kerr, president of Toronto Academy; Alderman Fred J. Conboy; Dr. A. E. Webster; Dr. E. C. Veitch of Board of R.C.D.S.; Dr. George Grieve, and many others. Dr. Joe Boyd, of Stratford, was the guest speaker of the evening, who chose as his subject "Citizenship". Dr. Boyd, deploring an attitude of "laissez-faire", exhorted his associates to take an active interest in civic and government affairs. Mr. Justice Kelly heading a long list of intimate friends of Dr. McDonagh spoke in glowing eulogy of his 47 years of service in the profession of den-

tistry. The last speaker of the evening, Dr. Sidney Woollatt, in his usual free and humorous style, presented the guest of honour with a sterling silver rose bowl inscribed as follows—"Presented to Dr. Andrew J. McDonagh with the love and esteem of his associates for his many contributions to dentistry." Dr. McDonagh responded briefly, thanking his friends for their kindness and assuring all that his humble efforts to further his beloved profession was a labour of love. To conclude a most pleasant and memorable evening Dr. Walter Dawson led in singing Auld Lang Syne.

Toronto Dentists are being organized into five district societies—Toronto East, Toronto North, Toronto West, Toronto South and Toronto Centre. These district societies, together with the Toronto Jewish Society, have been invited by the Toronto Academy of Dentistry to become component groups in that society. The Academy has altered its constitution so as to give members in good standing in each component society a reduced membership fee of \$7 instead of \$10 which still remains the regular fee to dentists not holding membership in component groups. It has been suggested that these component societies may in future be asked to elect a representative to the Academy Council, in which case these representatives would replace the present five councillors.

The Hamilton Dental Society has elected Dr. W. H. Foster as their new President. He will be ably supported by Honorary President Dr. E. C. Jackson who is to be congratulated on completion of a successful year in the President's chair. The other officers are: Vice-Pres., Dr. D. S. Coons; Sec'y, Dr. C. G. Stewart; Treas., Dr. John Cummer, and Convenor of Program Committee Dr. W. D. Clark.

Ottawa Dental Society—Congratulations are extended to Dr. Braithwaite Dixon on his election to the Presidency. With Dr. Alvin Cameron as Vice-President and Dr. W. Sherridan as Sec'y-Treas., and with the able support of the immediate Past-President, Dr. W. B. Beattie, success is assured in 1935-36.



ANDREW J. McDONAGH

News from the Provinces

The Ontario Dental Association on May 20th approved the principle of *public dental health* and instructed the board of governors to draw up a concrete plan to be submitted to the Federal Royal Commission on health insurance later this year.

QUEBEC

Montreal's first free dental clinic was opened in February under the auspices of the Junior Red Cross Dental Committee. The Montreal Dental Club undertook to act as supervisor in the appointment of dentists and of their work. The aim is to do preventive work.

The committee is formed of representatives of the Public Health Department, McGill University, Montreal Council of Social Agencies, Child Welfare Association, Local Council of Women, Imperial Order Daughters of the Empire, Junior League, Montreal Women's Club, Junior Red Cross and the Montreal and Verdun Protestant School Boards.

On May 10th there were 14 clinics in operation.

Dr. Dubeau Honoured. A decoration has been conferred upon Dr. Eudore Dubeau, dean of the faculty of dentistry of the University of Montreal, by the Republic of Haiti for services rendered to Haitian students coming to Canada, and particularly to the local French-Canadian university.

The title, the first to be conferred upon a Canadian, is known as Knight of the National Order of Merit and Honour of Haiti. Dr. Dubeau is already consul for Portugal, was appointed officer of the French Academy in 1905, officer of Public Instruction of France in 1916, and Chevalier de la Legion d'Honneur in 1925.

—*From Montreal Star, April 23rd, 1935.*

The new *dental museum* of the University of Montreal was officially opened on May 11th.

NEW BRUNSWICK

At the March meeting of the *Moncton Dental Society*, Dr. B. F. Reade gave an address on Dental Economics. This was followed by a round table discussion.

NOVA SCOTIA

Announcement has just been made that Dr. J. Stanley Bagnall, professor of dentistry and secretary of the Dental Faculty at Dalhousie University, has been elected a Fellow of the International Academy of Odontology. He is the only Canadian so honoured.—*Halifax Herald, March 9th, 1935.*

On Thursday, April 11th, the last meeting of the Halifax Dental Society for the year was held. An excellent paper on Pulp Therapy was given by Dr. Wilfrid Barnstaed. Dr. W. G. Dawson and Dr. G. K. Mackintosh were selected by the program committee to discuss the address.

Dr. Hugh M. Eaton, of Halifax, has been elected to membership in the International Association for Dental Research, at the March annual meeting of that body at Chicago, it was announced yesterday.

Membership is obtained by conducting an original investigation into any branch of dental science and presenting a report of the investigation at the annual meeting and its publication in the *Journal of Dental Research*. Dr. Eaton has been secretary of the Halifax branch of the association for the past several years.—*Halifax Mail, April 13th, 1935.*

ALBERTA

Last year the city of Red Deer rebated the business taxes of the medical doctors, in consideration of their giving generally unremunerative attention to those on relief. The doctors found this policy open to criticism on three grounds: Firstly, it did not represent a fair or sufficient return for services rendered; secondly, it was not equitably distributed, those who paid the biggest taxes not necessarily being the busiest with non-paying cases; and thirdly, it had been criticized by numerous lay taxpayers, who seemed to think that the medical men were getting a concession that they, the critics, should share.—*From the Advocate, Red Deer.*

SASKATCHEWAN

Dr. Harry Thompson, Field Secretary of the Canadian Oral Hygiene Council, was in

The Journal of The Canadian Dental Association

Saskatchewan early in the year, and was successful in arranging for school clinics to be carried on in remote parts of the province this summer. The clinics are to be financed jointly by the Saskatchewan Department of Health, the Canadian Oral Hygiene Council, and the Provincial Dental Council. The arrangements are under the direction of the Saskatchewan Dental Educational Committee, members of which were appointed by the Dental Council and are representative of all parts of the province.

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The Saskatchewan dentists appreciate greatly the successful efforts of the C.D.A. committee on Legislation in putting a stop to the flooding of the province with advertisements of "Dentistry by Mail", and consider this achievement a fine illustration of the value of a national organization speaking authoritatively for the whole profession.

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The Moose Jaw Dental Society held a very profitable meeting in March, when Dr. W. W. Irwin gave a comprehensive and thoughtful paper on Dental Economics. It was decided to enlarge upon the ideas contained in this splendid paper by conducting a series of study evenings during the spring months.

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It is reported that Saskatoon dentists wishing to participate in the new arrangement with the city for dental treatment of unemployed persons on relief, will be required to sign individual agreements with the municipality.

The new arrangement approved by the City Council, provides a fee of \$1.00 for the first tooth extracted and 50 cents for each additional extraction at the same sitting. No payment will be given by the city for any other form of dental work.

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It was reported on March 7th that municipality leaders would be asked shortly, to vote for or against State medicine. The plan would establish a fund to raise \$4,000,000, to initiate State medicine and State hospitals in

the province. Every farmer would have to pledge himself to contribute one cent per bushel from his crop, and bondholders would contribute their share by a small tax.

MANITOBA

At the annual meeting of the Winnipeg Dental Society the following officers were elected:

President—P. J. Gallagher.

Vice-President—P. Hutzulak.

Secretary-Treasurer—W. J. MacKenzie.

Members of Executive—W. A. Miller, S. H. Churchill.

At this meeting Dr. E. Roy Bier gave a paper on "Impacted Teeth; Their Cause and Effect". The paper was well illustrated by lantern slides and received with much interest by a large audience.

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After many months of negotiation with the Relief Committee of the City Council, the Public Dental Committee of the Manitoba Dental Association has arrived at a satisfactory arrangement for the handling of *dental relief* for the city unemployed.

A central Dental Clinic has been established at the Winnipeg General Hospital under the management of the Manitoba Dental Association, with the understanding that the Association assumes complete control without any outside interference of any sort.

The cost of the clinic is assumed by the City Council. This places Winnipeg in a class by itself, as other cities of Canada which have similar clinics receive financial assistance from various sources.

A schedule of fees for dental services rendered to those on relief for whom the Province assumes the responsibility, has been arranged, also, by the Health Committee of the Association. This schedule, together with the arrangement for the care of the dental relief of the City of Winnipeg, was unanimously approved at a special meeting of the Manitoba Dental Association called to receive the report of the Health Committee. A unanimous vote of thanks was extended also to the members of the committee for their services.

EMPIRE NEWS

GREAT BRITAIN

The financial report of the British Dental Association for 1934 appears in the April 1st issue of the *British Journal*. The total income for the year was £38,662. Grants were given for Research, amounting to £5,000; for Education £21,000; and for Dental Health Education £4,000.

The annual subscription to the association was increased as from January 1st of this year. In the case of ordinary members it was raised from two to three guineas.

The new headquarters of the British Dental Association, at 13 Hill Street, Berkeley Square, London W. 1, were officially opened on April 12th by the deputy minister of health, the minister being indisposed.

NEW ZEALAND

At the dental school of Otago University, Dunedin, there are at present 133 students enrolled, covering five academic years. Allowing for the inevitable drop in members of a

"year" as it proceeds, the output of the school should average 23 graduates per year.

Experience has shown that this number is very satisfactory, as it meets the wastage in the profession adequately, and does not tend to "overcrowd".

—*New Zealand Dental Journal*.

The annual report of *The Dentists' Provident Society* for 1934 shows a membership of 1,428. Subscriptions increased from £30,308 in 1933 to £32,328 in 1934.

The ratio of management expenses to subscription-income was 4.5 per cent. The Reserve Fund, which like all other assets is the exclusive property of the members, was increased from £20,000 to £24,878.

Mr. E. W. Fish, of London, has been invited by the Australian Dental Association to give a series of lectures in Australia in September.

GENERAL NEWS

Palestine. According to a recent announcement in the *Palestine Post*, the American Porcelain Tooth Company is going to open a factory at Naklat Itzhak. The output of the factory will be well over five million teeth a year.

Legislation. The Byrne-Streit Bill has been passed by the New York State legislature and signed by the governor. It prohibits advertising by dentists.

Belgian Dental Congress. The Fourth Belgian National Dental Congress, organized on the occasion of the BRUSSELS Universal and International Exhibition of 1935, to which Her Majesty Queen Elizabeth and Their Majesties the King and Queen of the Belgians have graciously accorded their patronage, will take place from the 1st to the 4th of August in the magnificent building of the George Eastman Dental Institute in BRUSSELS.

Agranulocytosis. Two fatal cases of Agranulocytosis were reported in "The Lancet" of Great Britain, January, 1935. One was a woman of 70 and the other a woman of 33. In each case the acute symptoms appeared in the mouth. Both patients were treated with pentnucleotide, but without avail.

Annual Report of S. S. White Company. In 1934 the S. S. White Company showed a net earning of \$353,847.63, before deducting Federal taxes but after allowances for depreciation, losses, and reserve for possible contingencies.

During the year, dividends totalling \$192,884.85 were paid, leaving a balance to be transferred to undivided profits for the year of \$94,795.59. The year's sales showed an increase of 11%.—*Dental News*.

Health Insurance. On March 5th, 1935, the Allied Dental Council, representing nine affiliated dental societies of the United States, with

a membership of over 3,000, passed a resolution favouring health insurance legislation in principle, although opposed to certain provisions in the bill before the State Legislature.

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New Catalogue. A new catalogue of instruments for testing dental materials is announced by the American Instrument Company of Washington, D.C. Especial attention has

been given to supplying the instruments required by the A.D.A. specifications for testing amalgam, casting investment materials, inlay casting wax, impression compound, cement, and gold. No such catalogue has been available heretofore.

Copies of the catalogue may be obtained from the American Instrument Company, 774-776 Girard St., N.W., Washington, D.C.

IN MEMORIAM

GRANT JORDAN—of Toronto, on April 23rd, in his 59th year. He graduated from the R.C.D.S. in 1898. He was a highly respected member of the Anglican Church. Dr. Jordan was very active, also, in lodge and in sports, particularly in rowing, shooting, and bowling.

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LEE F. CULVER—of Simcoe, Ontario, on April 30th, age 36. He was president of the Simcoe Liberal Association and was well known in golfing and masonic circles.

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GEORGE KERR THOMSON—of Halifax, Nova Scotia, died on May 2nd, age 65. Dr. Thomson was unusually active in professional affairs as well as those of Church and State.

He was past-president of the Canadian Dental Association; Dean of the Faculty of Dentistry of Dalhousie University; Past-President of the Dominion Dental Council, Nova Scotia Dental Association, and Halifax Branch of the Red Cross. He was a member of the Nova Scotia and New Brunswick Pharmaceutical Societies. He had filled, also, the following positions: Secretary of the Maritime Dental Association; Secretary-Registrar of the Nova Scotia Dental Board for twenty-five years; Professor of Crown and Bridge Work, Ceramics, Preventive and Clinical Dentistry; chairman of the Army Dental Services of the Canadian Dental Association; chairman of the Oral Hygiene Educational Committee of the Nova Scotia Dental Association; representative of the Canadian Government to the International Dental Congress, 1914, 1926, 1931; representative of Dalhousie

University to the British Empire Universities, 1931; chairman of the committee on Dental Education, 10th Conference of Canadian Universities; secretary of the Halifax section of the International Association of Dental Research; chairman of the Committee on Establishment of Pre-School-Age Dental Clinics.

He was the author of authoritative articles on Army Dental Service, Preventive Dentistry, etc. He was a major of the Canadian Army Dental Corps and captain of the 63rd Halifax Rifles and Army Medical Corps.

Dr. Thomson was a member of the Church of England choir and teacher in the Sunday School for many years.

He was recognized as one of the outstanding men in Canadian Dentistry and the profession has sustained a very severe loss in his passing.

He was a man of noble family, and had associated with many famous men during his forty-one years of active practice. He was planning to publish some of his reminiscences when his call came.

His very many friends deeply mourn his loss and extend to Mrs. Thomson their most sincere sympathy.

Character never dies. As Longfellow says:—

*"Were a star quenched on high,
For ages would its light,
Still travelling downward from the sky,
Shine on our mortal night."*

*"So when a great man dies,
For years beyond our ken,
The light he leaves behind him lies
Upon the paths of men."*

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L'INFECTION DE VINCENT

Par M. MONTE BETTMAN, D.M.D., Portland, Oregon.

Traduction du texte anglais par GUSTAVE RATTE, B.A., D.D.S., Québec.

COMME bien d'autres lésions péri-dentaires, l'infection de Vincent a porté plusieurs noms. Les plus connus sont: gingivite phagédénique, gingivite ulcéreuse aiguë, gingivite ulcero-membraneuse, "bouche des tranchées." Cette dernière appellation a commencé durant la guerre mondiale quand la maladie devint très répandue parmi les soldats dans les tranchées. Contrairement à l'opinion généralement admise, cette maladie n'a pas pris naissance durant la guerre, bien qu'elle ait atteint, à ce moment, sa plus grande importance. En raison de la nature grandement contagieuse de la maladie et du fait que les soldats vivaient en commun, dans des conditions absolument anti-hygiéniques, la maladie en atteignit un grand nombre.

La maladie fut signalée par Miller en Allemagne, en 1883, et par Vincent en France, en 1898. Depuis lors, elle a été connue sous le nom d'infection de Vin-

cent quand elle s'attaque au tissu gingival, et d'Angine de Vincent quand elle se développe au niveau de la gorge. Cette infection peut envahir simultanément la gorge et les gencives ou se limiter à l'un de ces deux terrains.

Le tissu gingival est le plus fréquemment atteint. L'infection de Vincent peut se greffer sur la gingivite chronique, la periodontoclasie ou même se développer sur un tissu sain. Elle se caractérise par son début plus ou moins subit, par la gangrène du bord gingival, accompagnée d'une haleine fétide très caractéristique. Les gencives saignent au moindre toucher. Dans les cas graves, on constate, en plus, de l'anorexie, une élévation de la température et quelquefois des éruptions exanthémateuses.

Hirschfield a classifié cette maladie en deux types différents: type destructif et type hypertrophique. Dans le premier genre, les symptômes cliniques les plus

marquants sont l'ulcération, l'exfoliation de la gencive marginale, principalement dans les espaces inter-proximaux. Le tissu gangrené est blanc, jaunâtre ou grisâtre. Cette couche mortifiée s'enlève facilement de sa base et laisse une surface congestionnée qui saigne facilement. Pour le second genre, les symptômes subjectifs et objectifs demeurent les mêmes que dans le premier cas, sauf qu'il y a une hypertrophie marquée et douloureuse de la gencive, avec ou sans gangrène.

Les microbes que l'on croit responsables de cette maladie sont le bacille fusiforme et le tréponème de Vincent. Il est maintenant admis par la plupart des autorités en la matière, que ces microbes peuvent se trouver dans presque toutes les bouches et que la présence ou l'absence de ces bactéries à l'examen bactériologique ne peut permettre d'établir un diagnostic sûr. Fréquemment ces bactéries de Vincent pullulent dans des bouches qui ne présentent aucun symptôme clinique de la maladie. Ces micro-organismes, quand ils sont très répandus dans la bouche de personnes apparemment en santé, s'attaquent seulement aux tissus qui ont été affaiblis par quelque autre agent. Une bouche dont on a pris bien soin et dans laquelle la muqueuse buccale offre un aspect parfaitement sain, n'est pas susceptible d'être atteinte par l'infection de Vincent.

La maladie de Vincent, observe Bloodgood, ne s'est jamais trouvée chez un patient dont les dents et les amygdales avaient été enlevées. Dans mes nombreuses années de pratique, je ne puis me rappeler un cas de la maladie de Vincent dans une bouche où les tissus avaient été gardés à un haut degré de vitalité, c'est-à-dire dans une bouche où la résistance des tissus gingivaux n'avait été amoindrie en aucune façon.

Dans mon opinion, les microbes introduits dans une telle bouche ne produiraient probablement pas la maladie. Mais qu'une partie quelconque de la gencive ne reçoive pas les soins prophylactiques nécessaires ou qu'elle soit constamment irritée par des obturations surplombantes, des dépôts, etc., elle deviendra le premier endroit atteint de la maladie. Cette infection se loge, en premier lieu, dans les espaces inter-dentaires et dans le triangle retro-molaire, bien qu'elle puisse se déclarer n'importe où sur le bord de la gencive et à des endroits distants les uns des autres.

La diagnostic devient facile à la période aiguë de la maladie. Les symptômes les plus marquants sont une ex-foliation gangreneuse blanc-grisâtre le long du bord de la gencive malade qui, lorsqu'elle est enlevée, laisse une surface avivée et saignante. L'haleine offre une odeur caractéristique facile à se rappeler quand on l'a une fois sentie. Comme il a été dit précédemment, il y a aussi douleur, tendance à l'hémorragie, mauvais goût, malaise et souvent présence de température. Un diagnostic prudent devrait toujours être fait et si après un ou deux jours le traitement n'améliore pas l'état de la cavité buccale, il faudra alors modifier son premier diagnostic. Parfois on a pris pour de la stomatite de Vincent des affections parfaitement étrangères à cette maladie.

Mennifield rapporte un cas où les gencives d'une fillette de 14 ans étaient congestionnées et tuméfiées sur toute l'étendue des deux arcades dentaires. On diagnostiqua une stomatite gangreneuse et dix jours plus tard la petite patiente s'éteignait de leucémie myélogène aiguë.

L'infection de Vincent est très contagieuse et le patient devrait être averti de

ne pas exposer les autres à la contagion. La maladie se propage par contact direct, par exemple le baiser, par l'usage du même verre, des mêmes assiettes, etc.

Le traitement consiste dans la diminution du nombre de microbes infectieux ou leur entière élimination et aussi dans l'enlèvement de toute source d'irritation du tissu gingival.

Les microbes qui causent la maladie étant anaérobiques, les médicaments de choix sont ceux qui dégagent de l'oxygène. Beaucoup de remèdes ont été employés, ainsi le perborate de soude, le peroxyde d'hydrogène, l'acide chromique, le nitrate d'argent, l'acide trichloracétique et les teintures d'aniline.

Depuis ces dernières années, le médecin a essayé le traitement de cette maladie par des injections intra-veineuses de neosalvarsan mais a négligé tout traitement local. Ce traitement, bien qu'il apporte une diminution des symptômes aigus, ne donne pas souvent la guérison, mais laisse le patient avec une infection subaiguë ou chronique. Cette méthode de traitement doit être mise au rancart et le cas soumis de préférence à un dentiste compétent, car la muqueuse buccale ne redeviendra normale qu'après l'élimination des causes locales et bactériologiques de la maladie. Le traitement aux résultats les plus rapides et les plus satisfaisants, est, à mon avis, comme suit: Après avoir fait un diagnostic positif, les dents et les gencives sont frottées méticuleusement avec un rouleau de coton imbibé d'un mélange de teinture de savon vert (une partie), de peroxyde d'hydrogène (deux parties) et d'eau (trois parties). Puis les espaces inter-dentaires sont vaporisées avec une solution diluée de peroxyde d'hydrogène, puis la bouche est rincée avec de l'eau. Toutes les parties malades sont ensuite

traitées avec une solution à 5% d'acide chromique et, immédiatement après, le patient se rince la bouche avec une cuillerée à thé de peroxyde d'hydrogène, pendant environ trois minutes, gardant ainsi, lèvres closes, l'acide chromique et le peroxyde en contact avec les tissus affectés. Le traitement ci-dessus est répété le lendemain et le surlendemain, après quoi une prophylaxie très soignée est faite pour l'enlèvement de tous les dépôts, le nivellement des obturations surplombantes, le polissage des bords tranchants des cavités, en un mot l'élimination de toute source d'irritation.

Dès la première visite, une solution à 1 pour 2000 de bichlorure de mercure est donnée au patient avec recommandation de se rincer la bouche toutes les une ou deux heures avec cette solution mêlée à une égale partie d'eau. On peut ajouter une petite quantité de bicarbonate de soude pour rendre cette solution alcaline.

A la troisième visite, tous les conseils sont donnés sur le soin de la bouche à domicile et sur la nécessité de maintenir l'hygiène buccale par un brossage approprié.

Fumer, principalement la cigarette, doit être déconseillé pendant le traitement, parce qu'on a remarqué que l'usage du tabac retardait la guérison. On doit aussi porter attention à l'alimentation.

Les extractions ou toute opération dans la cavité buccale sont contre-indiquées durant la période aiguë et doivent être remises tant que la maladie n'est pas sous contrôle.

Bien traitée, l'infection de Vincent se guérit d'ordinaire facilement et à moins qu'elle ne se soit produite chez un pyorrhéique, la perte des tissus se répare d'une manière surprenante.

Mayer Building, Portland, Oregon.

RAPPORT INTERIMAIRE DU COMITE DE LEGISLATION ET DE DENTISTERIE D'ETAT DE L'ASSOCIATION DENTAIRE CANADIENNE

Par FRED. J. CONBOY, D.D.S., Toronto, Ontario.

Une preuve bien montée contre l'utilisation du service des postes pour la confection des pièces de prothèse.

(Traduction du texte anglais par Viger Plamondon, D.D.S., M.S., Québec.)

UNE délégation de L'Association Dentaire Canadienne s'est rendue à Ottawa, présenter les vues du comité de Législation, sur les trois questions suivantes; a). la poste au service des laboratoires dentaires pour la commercialisation de la prothèse, b). droits de douanes sur matériel dentaire et accessoires, c). rapport de l'impôt sur revenu.

Cette délégation se composait du Dr. Walter G. Thompson, directeur de l'Hygiène Dentaire de l'Ontario et du Dr. Fred. J. Conboy, président du comité de Législation de l'Association Dentaire Canadienne. Grâce à la courtoisie du Dr. Ira W. Hamilton d'Ottawa, des rendez-vous furent fixés avec les chefs des divers départements du gouvernement et les résultats des entrevues furent des plus encourageants.

Nos réclamations étaient basées sur une enquête sérieuse des différentes questions soumises à l'Exécutif du Comité de Législation, composé des Drs. E. A. Grant, E. C. Veitch, J. C. Devitt, R. M. McLean, Fred. J. Conboy, C. Angus Kennedy, T. E. C. Butler, A. D. A. Mason, Walter C. Thompson, W. H. Woodrow et Douglas Coupland. Les trois confrères membres de la Chambre des Communes, les Drs. O. B. Price, Général J. S. Stewart, M. Duguay, furent des précieux auxiliaires pour nos représentants. Le Dr. O. B. Price consacra même son après-

midi à la question. Après ces entrevues très satisfaisantes, le Comité entretient de grands espoirs que toutes nos requêtes seront définitivement accordées.

Voici le rapport, tel que présenté:

Le Service Postal utilisé pour commercialiser la Prothèse

Notre délégation réclamait que le service des postes et celui des compagnies de messageries fussent refusés à la "Chicago Dental House," maison de commerce de Chicago, confectionnant des pièces de prothèse pour les canadiens, en se servant d'une méthode par laquelle le patient prend lui-même sa propre empreinte et son articulé. Notre Comité a longuement discuté la question avec M. T. F. Coolican, assistant-maître de poste, et lui a soumis les faits suivants pour établir la preuve.

1o-, Cette compagnie annonce dans des Revues canadiennes qu'elle confectionne, à la satisfaction des patients, des pièces de prothèse, à prix réduits. Elle donne au client un moyen de prendre l'empreinte de sa propre bouche, puis d'enregistrer son articulé. Elle tient à connaître la taille et le teint du patient.

L'Association Dentaire Canadienne fournit comme pièce à conviction No. 1, un exemplaire de ses circulaires, un dépliant contenant des notes explicatives ainsi que le matériel pour la prise d'empreintes.

20-, A moins de chance exceptionnelle, il est impossible, par l'application de cette méthode, de confectionner une pièce de prothèse adaptable aux tissus buccaux sans les déformer, ni les irriter et d'une apparence esthétique convenable.

L'Association Dentaire Canadienne, par l'entremise de son comité, a soumis un patient édenté aux soins d'une de ces maisons américaines. Bien qu'il suivit méticuleusement toutes les instructions données, il reçut des pièces d'aucune utilité pour lui.

A l'appui de notre prétention, nous produisons comme pièce à conviction No. 2, les rapports des facultés de Chirurgie-Dentaire de plusieurs Universités, et, aussi ceux d'autorités reconnues en prothèse dentaire.

30-, Cette pratique est préjudiciable à la santé publique, parce que ces pièces, quand on parvient à les porter, offrent un pouvoir de mastication très réduit; leur articulé en suroclusion peut conduire à la surdité, causer de l'irritation ou lacerer les tissus, de manière à favoriser le cancer; l'inéluctable insuccès réservé à ces pièces peut décourager le patient et lui enlever toute confiance envers un dentiste capable de lui confectionner des pièces de prothèse sur des modèles obtenus d'empreintes fidèles, d'après une prise d'articulé précise et avec un montage de dents artistique, etc. . . .

A l'appui de notre prétention, nous soumettons comme pièce à conviction No. 3, le rapport de M. le sous-ministre de la Santé de l'Ontario.

40-, Ce genre de pratique est illégal au Canada. Aucun profane ne peut légalement exécuter des opérations dentaires en de semblables conditions. Le Gouvernement du Canada, il y a quelques années, et les Cours de Justice, en plus

d'une occasion, décrétèrent que le fait de remplacer les dents naturelles constituait une opération dentaire.

Comme preuve de notre prétention, nous soumettons comme pièce à conviction No. 4;

a) une lettre du sous-ministre de la Santé de l'Ontario, spécimen No. 3.

b) une résolution du Royal College of Dental Surgeons, Ontario, déclarant cette pratique illégale dans l'Ontario.

c) une opinion légale de M. I. F. Hellmuth, procureur du Royal College of Dental Surgeons, au même effet;

d) des preuves analogues venant des provinces de Québec et de la Colombie-Anglaise;

e) une lettre du Dominion Dental Council of Canada.

50-, Il est inutile d'appuyer davantage pour démontrer que cette pratique est en elle-même frauduleuse, puisque les gens de science admettent qu'elle conduit fatalement à l'insuccès. Le fait que les Universités, de concert avec le Gouvernement, établissent des cours pour la formation de dentistes, offre une preuve évidente que cet art ne saurait être exercé d'une manière satisfaisante par des personnes sans expérience soumises à un contrôle fort éloigné. De plus, les Canadiens ainsi trompés et lésés n'ont aucun recours devant nos cours de justice contre les coupables.

60-, Cette pratique est aussi condamnée par la "Federal Trade Commission" de Washington, par la "Chicago Business Bureau" ainsi que par l'Association Dentaire Américaine.

A l'appui de notre prétention, nous produisons comme pièce à conviction No. 5. un éditorial de l'Association Dentaire Américaine publié dans la revue de la dite association en janvier 1935.

70-, Cette pratique est injuste pour les dentistes du Canada puisqu'elle viole leurs droits et privilèges. Elle permet à une compagnie étrangère de faire en notre pays ce que nos lois interdisent aux Canadiens. Elle donne, en plus, une fausse impression des services professionnels, des connaissances, de l'habileté nécessaires pour la confection d'une prothèse, et des honoraires exigibles par le dentiste. Elle constitue une concurrence injuste de provenance étrangère, concurrence menée par des gens n'ayant aucun intérêt dans notre pays, ne déboursant pas un sou au Canada ni pour location de bureau ni pour frais d'administration, ni en impôt. Les dentistes du Canada, durant la crise comme par le passé, ont agi loyalement envers le public. Il est donc injuste de permettre à une

compagnie, étrangère au pays comme à la profession, de nuire d'une manière aussi préjudiciable aux dentistes canadiens.

M. Coolican nous témoigne de la sympathie et explique que ce commerce par la Poste ne pouvait être refusé que si nous prouvions fraude. Il suggéra alors que la preuve sur ce point fût plus probante et promit une décision favorable aux délégués dès l'obtention de détails additionnels probants.

Note de la rédaction

Faute d'espace, force nous est d'omettre la publication des parties de ce rapport concernant l'Impôt sur le Revenu, les modifications réclamées sur le tarif douanier en rapport avec l'importation de matériaux, d'appareils et d'instruments dentaires et, enfin, l'assurance contre la maladie.

LE DOCTEUR FERNAND WATRY DE BRUXELLES A QUEBEC

LE 8 avril dernier, le Docteur Fernand Watry, directeur de la clinique dentaire (Fondation Eastman) de la ville de Bruxelles, donnait une conférence à la Société de Stomatologie de Québec.

M. Watry, bien que docteur en médecine, s'est intéressé à la dentisterie, puis est devenu stomatologiste. Conscient de la pénurie de ses connaissances dentaires pour satisfaire une clientèle de choix, il décida de compléter ses études dans des écoles dentaires. Fort de cette expérience personnelle, il devint un apôtre convaincu de la nécessité de longues études dentaires associées à celle de la médecine pour la préparation à la pratique de l'art dentaire.

Pour former un dentiste compétent, certains préconisaient quatre années d'études exclusivement médicales suivies de deux années de spécialisation en dentisterie. Le Docteur Watry reconnaît l'importance de la formation médicale pour le dentiste, mais il est d'avis que l'on ne saurait compléter ses études et sa formation de dentiste en moins de quatre années d'études dentaires précédées de deux années d'études médicales.

L'opinion du Docteur Watry ne laisse pas d'être très importante parce qu'elle découle d'une expérience vécue par celui-même qui l'émet. Le Docteur Watry fut médecin aux armées durant la grande guerre. Après un an de captivité, il

s'évada et se vit confier la direction du service de Chirurgie maxillo-faciale de l'armée.

Officier des ordres belges de la Couronne et de Léopold, au titre militaire, Chevalier de la Légion d'Honneur, le Dr Watry, au lendemain de la guerre, joue un rôle de premier plans dans la Fédération Dentaire Internationale où il occupe, depuis dix ans, le rang de vice-président de la Commission d'Hygiène Dentaire Infantile.

Auteur de nombreux travaux scientifiques sur la médecine dentaire infantile,

il ne s'occupera dorénavant que de dentisterie infantile et d'orthodontie. Jusqu'en ces derniers temps, il a dirigé l'école dentaire de Bruxelles, poste qu'il a dû quitter lors de sa nomination ci-haut mentionnée à la Fondation Eastman.

Fin causeur, servi par une heureuse mémoire, le Dr Watry fit défiler, plus d'une heure durant, avec la plus grande aisance, anecdotes, fait historiques, expériences scientifiques, au charme des membres de la Société de Stomatologie de Québec.

P. H.

QUATRIEME CONGRES DENTAIRE NATIONAL BELGE—1-4 AOÛT 1935 INSTITUT EASTMAN-BRUXELLES

LE Quatrième Congrès Dentaire National Belge organisé à l'occasion de l'Exposition Universelle et Internationale de BRUXELLES en 1935, et auquel S.M. la Reine Elisabeth et LL. MM. le Roi et la Reine ont daigné accorder leur Haut Patronage, se tiendra du 1er au 4 août dans les magnifiques locaux de l'Institut Dentaire Georges Eastman à BRUXELLES.—Cet édifice abritera en même temps une Exposition des Fabricants et Fournisseurs, qui ne sera pas un des moindres attraits du Congrès.—Ce Congrès dont l'organisation est déjà très avancée, comprendra deux assemblées générales, des séances de sections et de démonstrations. L'assemblée générale inaugurale du Congrès aura lieu exceptionnellement au Palais des Académies. Le Rapport général qui y sera présenté a été confié au Dr. WATRY et aura comme sujet: "La prophylaxie et le traitement précoce."—

L'assemblée de clôture permettra d'étudier l'organisation de la dentisterie dans la Colonie.—

Quatre sections sont prévues: trois scientifiques et une de démonstrations. Dans chaque section scientifique une question est mise à l'ordre du jour et fait l'objet d'un rapport.

Les programmes réunissent déjà les noms de conférenciers les plus éminents et de praticiens les plus avertis.

Les confrères désireux de présenter au Congrès des travaux originaux—communications et démonstrations—sont cordialement invités à se faire connaître au président de la section qui les intéresserait:

Première Section: Sciences pures: Anatomie, physiologie, pathologie, bactériologie, prophylaxie et thérapeutique, orthopédie, hygiène; Président: Dr. F. WATRY, 35, Rue Souveraine, à BRUXELLES.

Deuxième Section: Sciences appliquées: Dentisterie opératoire, Prothèse. Sous-section coloniale; Président: M. Walter FAY, 67, Rue Marie-Thérèse à BRUXELLES.

Troisième Section: Chirurgie Maxillo-Faciale, Anesthésie, Radiographie, Electrothérapie dentaire; Président: Dr. Géo J. BAUDOUX, 342, Avenue Louise à BRUXELLES.

Quatrième Section: Démonstrations. Président: M. Cyrus-N. FAY, 53, Rue

Capouillet à BRUXELLES.

Pour tous renseignements s'adresser à Mr. A. JOACHIM, Président du Congrès 3, Rue de Hornes à BRUXELLES ou à Mr. L. DEMOULIN, Secrétaire-Général du Congrès, 15, Avenue Fonsny à BRUXELLES.

LA SOCIÉTÉ DENTAIRE DE MONTREAL

LE 16 avril dernier, La Société Dentaire de Montréal a tenu sa séance régulière, conjointement avec les Sociétés Médicale et de Phtisiologie, dans le grand amphithéâtre de l'Université. Ce fut la première assemblée du genre où Médecins et Dentistes manifestèrent une étroite coopération. La partie médicale fut présidée par le Dr. Guy Hamel, qui présenta le Dr. A. Q. Penta de "l'University Temple" de Philadelphie. Le conférencier traita en français "des spirochettes oraux et des anaérobies associés dans la pyorrhée et dans l'abcès du poumon." Il fut remercié par le Dr. Charles Bertrand,

président de la Société de Phtisiologie.

La partie dentaire, sous la présidence du Dr. J. Arthur Renaud fut traitée par le Dr. François Ackermann de Genève, Suisse. Le distingué conférencier développa d'une manière précise le sujet suivant: "Les changements de forme (métamorphies) des dents résultant de l'articulé normal." L'invité d'honneur fut remercié par le Dr. Alcide Thibaut, Professeur à la Faculté Dentaire de l'Université de Montréal, qui fit ressortir l'importance de la coopération du médecin et du dentiste, dans l'art de guérir.

SESSION DE LA FEDERATION DENTAIRE INTERNATIONALE BRUXELLES—4-10 AOUT 1935

LA 29ème session de la F.D.I. se tiendra du 4 au 10 août prochain à BRUXELLES, dans les magnifiques locaux de l'Institut Dentaire Georges Eastman et suivra immédiatement le 4ème Congrès Dentaire National Belge. Cette session est la dernière qui précédera directement le Congrès International de VIENNE fixé en 1936. Elle sera donc particulièrement importante et dès à présent de nombreuses questions sont mises à l'ordre du jour des différentes commissions. Il est possible que l'inauguration

officielle de l'Institut Eastman de Bruxelles coïncide avec la réunion de la F.D.I.. Si on ajoute l'attrait qu'offrirait cette année Bruxelles par son Exposition Internationale qui s'annonce comme devant dépasser toutes les expositions précédentes, nul doute que nos confrères de la F.D.I. ne viennent nombreux participer à ses travaux.

Pour tous renseignements, s'adresser au Secrétaire Général de la F.D.I. Mr. Ch. F. L. NORD, I, Scheveningscheweg, La HAYE.

LA PRATIQUE DE LA PROTHESE INTERDITE AU CANADA POUR CERTAINS LABORATOIRES DENTAIRES AMERICAINS

DEPUIS plus de deux ans, l'Association Dentaire Canadienne a reçu de nombreuses plaintes contre la Chicago Dental House et l'International Dental House. Ces maisons prétendaient être en mesure de confectionner des pièces de prothèse de premier ordre sur des empreintes prises par les patients eux-mêmes. Elles adressaient du Stent ou du Kerr au patient et lui indiquaient de quelle manière prendre l'empreinte de ses maxillaires, et enregistrer un articulé. C'était fantastique, mais tout de même, avec beaucoup de réclame, ces laboratoires dentaires faisaient de nombreuses victimes au Canada et nuisaient, en plus, considérablement aux dentistes canadiens.

Le comité de Législation de l'Association Dentaire Canadienne, présidé par le

Dr. Fred Conboy, entreprit la lutte contre ces organisations. Dans une lettre en date du 9 mars, 1935, M. T. P. Coolican du Ministère des Postes vient de nous apprendre que désormais les laboratoires dentaires ci-haut mentionnés ne pourraient plus utiliser la malle Royale pour les fins de leur commerce en Canada.

N'est-ce pas là un cas qui illustre très bien l'utilité de l'Association Dentaire Canadienne, pour la protection du public et de la profession?

Le comité de Législation travaille aussi activement à la revision du tarif sur les équipements dentaires. Le Ministre des Finances, l'Honorable E. N. Rhodes, écrivait au Dr. Conboy à cet effet le 5 mars dernier. Faute d'espace, nous ne pouvons reproduire cette documentation dans la Section française.

LES AMALGAMES

LA "Canadian Dental Research Foundation" vient de publier une brochure intitulée "Dental Amalgams". Ce travail a pour auteur M. Thomas Cowling, M.A., D.D.S., B., Paed, professeur de technologie et de métallurgie dentaires à l'Université de Toronto.

C'est une étude de la composition des alliages utilisés pour les obturations, de leur préparation, de leurs propriétés physiques et de l'importance clinique de ces derniers. L'auteur donne, par le détail, la technique pour la manipulation des amalgames, relate leurs changements de dimension dans la cavité buccale et les causes de leur décoloration.

Le Dr Thomas Cowling mérite des félicitations pour sa contribution scien-

tifique offerte à notre profession.

On peut se procurer cette brochure en s'adressant à la Canadian Dental Research Foundation, 312, Edifice Medical Arts, Toronto.

MICROSCOPIE ELECTRONIQUE

LE Siècle-Médical, dans son numéro du 15 février dernier, rapporte qu'un des progrès les plus considérables dans la technique du microscope vient d'être réalisé. Un nouveau dispositif déjà appliqué à la biologie peut donner un pouvoir séparateur de 22 cent millions de millimètre au lieu de 4 dix millièmes que l'on obtient avec le microscope optique. Voilà un progrès que d'aucuns auraient cru chimérique autrefois.

The Journal of The Canadian Dental Association

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KING GEORGE'S SILVER JUBILEE

(Dedicated to Their Majesties)

All hail King George and Mary—Queen,
In this eventful year,
Which marks their Silver Jubilee
As monarchs—without peer!

For five and twenty years they've ruled
The Empire in its might!
All through the troubled years of war,
They stood for Freedom's right!

Their children are beloved by all—
The Prince of Wales, in fact,
To all the world Ambassador
Of Peace—with princely tact!

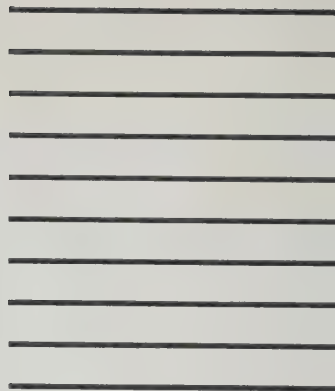
God bless King George and Mary—Queen,
May they be spared, we pray,
For many years enjoy good health—
To them all homage pay!

W. A. BLACK, M.A., D.D.S.,
TORONTO, ONTARIO.

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*(Acknowledged by the representative of His Majesty the
King on May 15, 1935.)*

R. L. PALLAN, D.M.D., PRESIDENT-ELECT
Canadian Dental Association—Vancouver, B. C.



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PHONETICS AND SPEECH DEFECTS IN PROSTHETIC DENTISTRY

By WILLIAM K. PRENDERGAST, D.D.S., Toronto, Ontario.

WEBSTER defines phonetics as "The science of speech sounds considered as elements of language; especially the study of their formation by the speech organs and apprehension by the ear."

Articulate speech is the result of vocal sounds, single or combined, continuous or interrupted, varied by pitch, volume, and intensity. A knowledge of the physics of sound is essential to a comprehension of the mechanism of speech, since the latter is based on the former. An architect, to be proficient, must study acoustics; a singer, to be proficient, must study the physiology of voice production; yet the great majority of dentists, I venture to say, have little if any knowledge of the science of speech, apart from the names of the organs of speech; this, in spite of the fact that our profession is concerned solely with anatomy that is vital to speech. It is my purpose in this paper to discuss the physiology of speech, and to indicate how valuable the knowledge of this is in prosthetic dentistry.

The human vocal instrument has three elements common to all musical instruments:—

1. A motor, consisting of the respiratory muscles and the lungs.

2. A vibrator, consisting of the vocal cords.

3. A resonator, consisting of the throat, mouth, and the nasal and head cavities, or sinuses.

In addition to these three, it has what all other musical instruments lack, viz., an articulator, which consists of the lips, tongue, teeth and palate. The lungs furnish the air, the cords vibrate, and the pharynx, buccal cavities, teeth, palate, tongue, cheeks, lips, nose, and resonant cavities, (Fig. 1) alter or modify the tone at the will of the speaker.

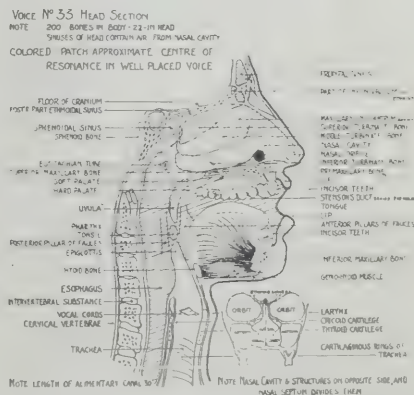


FIGURE 1

Organs of voice production and speech. (Through the kindness of W. E. Cummer, D.D.S.).



WILLIAM K. PRENDERGAST

The principal organ concerned with the production of voice is the larynx, which contains the vocal cords. These cords are actually neither cords nor bands, but instead are thick portions of membrane extending across the inner surface of the larynx.

The glottis is the aperture between the cords, together with all that part of the larynx which is concerned in voice production.

The epiglottis is the valve which closes over the upper opening of the larynx during deglutition; it also assists in converting into tone the vibrations set up by the vocal cords.

The pharynx, or throat, extends from

the larynx to the nasal cavity. The posterior wall of the pharynx, by means of the action of the superior constrictor muscle in forming a protuberance called "Passavant's mound," makes contact with the soft palate and thus closes off the passage into the nose. This pharyngeal movement in normal articulation becomes a vital factor in articulation with full dentures, which must have a posterior valve bearing on the soft palate for retention.

The mandible furnishes attachment for the muscles of the tongue and hyoid bone, and, owing to the connections of the larynx with the hyoid bone, the mandible controls the muscles that fix the position of the larynx. It also controls the position of the lower lip and teeth.

The soft palate modifies the opening into the nose and thus attunes the resonant cavities to the pitch and timbre of the note given by the cords. From the prosthetic viewpoint soft palates are classified, as follows:

1. Those that extend horizontally posterior to the hard palate for some considerable distance.

2. Those that extend horizontally posterior to the hard palate for a short distance.

3. Those that drop almost vertically from the junction with the hard palate.

A No. 1 palate will rarely occasion denture difficulties of either function or phonetics, but a No. 3 palate is a prolific source of trouble.

The tongue plays an important role in altering through its movements the shape of the oral cavity. The tongue has been considered, in the past, to be the most valuable organ of speech, but it has been proven more recently that defects of the tongue rarely produce anything but minor defects of speech. Even with total loss

of the tongue fairly clear speech has been accomplished. Patients having small tongues rarely experience any difficulty in wearing dentures, but patients having abnormally broad and full-rounded tongues are handicapped tremendously both in function and phonetics.

The lips are also organs of articulation and their free action must not be restricted by dentures whose flanges are too long or too thick.

The teeth form, in part, the walls of the oral cavity. They furnish a point of impingement in articulation and play their part in sympathetic resonance. The presence of teeth is not essential to speech, for almost all sounds can be formed, after a fashion, by the edentulous. The teeth, in phonetics, have not received the attention from dentists that their importance demands. They have been regarded almost universally as organs of mastication only, and, when artificial teeth were required, if function was attained without seriously interfering with aesthetics, both the dentist and the patient were satisfied. The neglect to recognize the teeth as important organs of speech has existed, partly through the general ignorance in reference to mechanism of speech, and partly because neither the entire loss of the natural teeth, nor the substitution of very inferior ones, has actually destroyed articulation.

The palate, as an organ of speech ranks next to the larynx in order of importance. The greatest loss of formation of speech sounds is caused by defects of the palate. Even small openings found at the junction of the hard and soft palate in syphilitics give a strong nasal quality to speech. Cleft palate deprives the patient of the ability to cut off communication between the oral and nasal cavities, thus

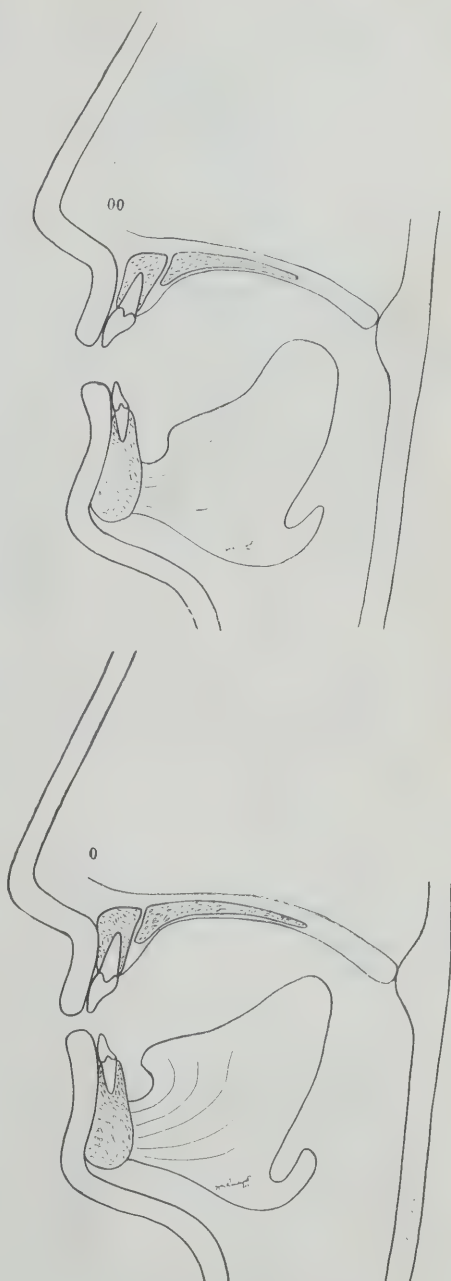


FIGURE 2
Vowels oo and o—Note protuberance in pharynx known as "Passavant's Mound". This is formed by the action of the superior constrictor muscle and closes off the nasal passage by its contact with the soft palate.

rendering him incapable of producing a large number of sounds most essential to normal speech.

Articulate speech may be divided into two main classes, viz., vowels and consonants.

VOWELS

A vowel is a voiced sound in the production of which the breath has a free passage through the mouth, or mouth and nose (foreign vowels) without producing any audible friction. The five fundamental vowel sounds used in the English language are OO, O, AH, A and E. Doctor Bristowe in a lecture before the Royal College of Surgeons has listed as many as eleven vowel-sounds in the following words: soup, soot, sup, soap, sock, sought, sit, set, sat, sate, and seat. The tongue positions for these sounds range from the extremes of OO and E inclusively. The passage through the nose is completely shut off for all English vowels. For the production of OO (Fig. 2) the lips must be pushed forward so as to make the cavity of the mouth as deep antero-posteriorly as possible, at the same time making the orifice of the mouth small. The tip of the tongue is depressed in the floor of the mouth and its back is lifted high toward the palate, but it does not touch the roof of the mouth at any point; the jaws are opened and the lips contracted, so that the oral cavity becomes bottle-shaped. The vowel O (Fig. 2) is formed when the mouth is slightly opened; the lips are not so close, and the tongue is not so much retracted at the tip nor lifted so high at the back as in OO. In the production of AH, (Fig. 3), the oral cavity is distended to its greatest capacity; the tongue lies comparatively flat, and the soft palate is lifted to its highest elevation. The vowel A

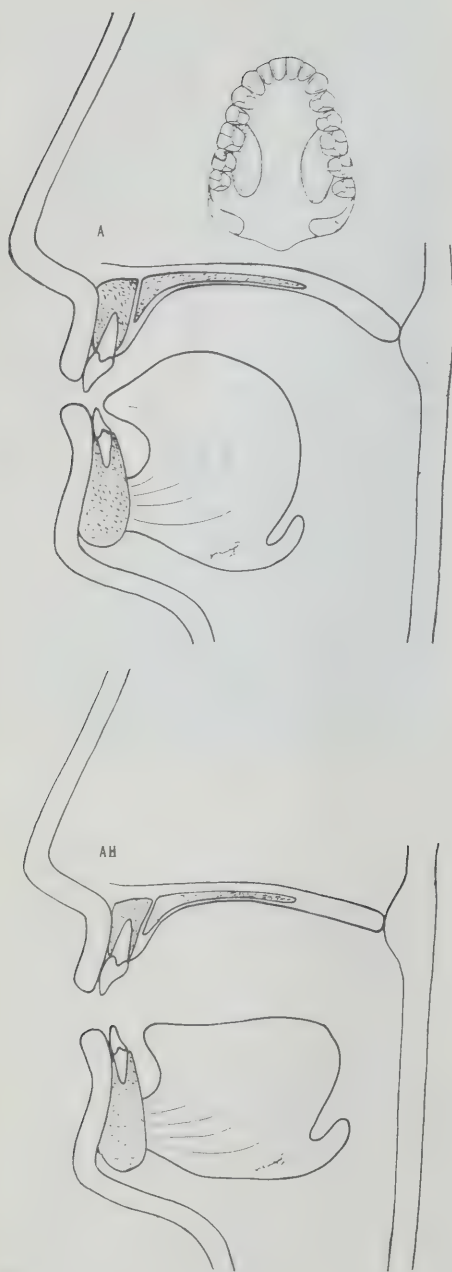


FIGURE 3

Vowels AH and A (as in say)

The vowel sound E (as in see) is almost identical with A. These latter two are the only vowels in which the tongue contacts the palate.

Place of articulation	Oral				Nasal
	momentary		continuous		continuous
	without voice	with voice	without voice	with voice	with voice
Lips	P	B		W	M
Lips and teeth			F	V	
Tongue and teeth			TH	TH	
Tongue and hard palate (forward)	T	D	S	ZH	N
Tongue and hard palate (back)	CH	J	SH	ZH	
Tongue-tip and hard palate (forward)			L		
Tongue			R		
Tongue and soft palate	K	G			NG
Glottis	H				

FIGURE 4
Classification of consonants (after Sewell).

(Fig. 3) requires a wider lip opening, but the volume of air within the mouth is diminished by the elevation of the tongue. We find now, for the first time, the tongue touching the roof of the mouth. This contact is with the lingual surfaces of the upper molars and the adjacent alveolar border. In the vowel E, the resonant cavity of the mouth, in both form and dimensions, is still smaller than in A. The vocal passage assumes the nature of an elongated tube. The extension of the tongue-contact to include the upper bicusps and the adjacent alveolar border assists in the reduction of the resonant cavity.

Formation of vowel sounds does not create many denture difficulties. In the vowels OO and O, if the lingual posterior flanges of the lower denture are too long the necessary raising of the back of the tongue will be difficult. In the vowel AH the muscular distention will

unseat a lower denture, the buccal flanges of which are too long. The elevation of the soft palate will unseat an upper denture which is improperly post-dammed.

CONSONANTS

A consonant may be described as a speech-sound produced by the complete or partial obstruction of the breath in such a way as to give rise to explosion, audible friction, or rolling, in any passage from the larynx upwards, such sound being accompanied or unaccompanied by voice. Consonants are classified according to the location in which the sound actions take place, viz., labial, dental, palatal, and nasal. (Fig. 4.)

Labial consonants—the three lip consonants P, B and M. (Fig. 5.) To produce the sound P, we have only to stop the sound of AH by closing the lips, and suddenly opening them to allow the force of the breath-current to expend it-

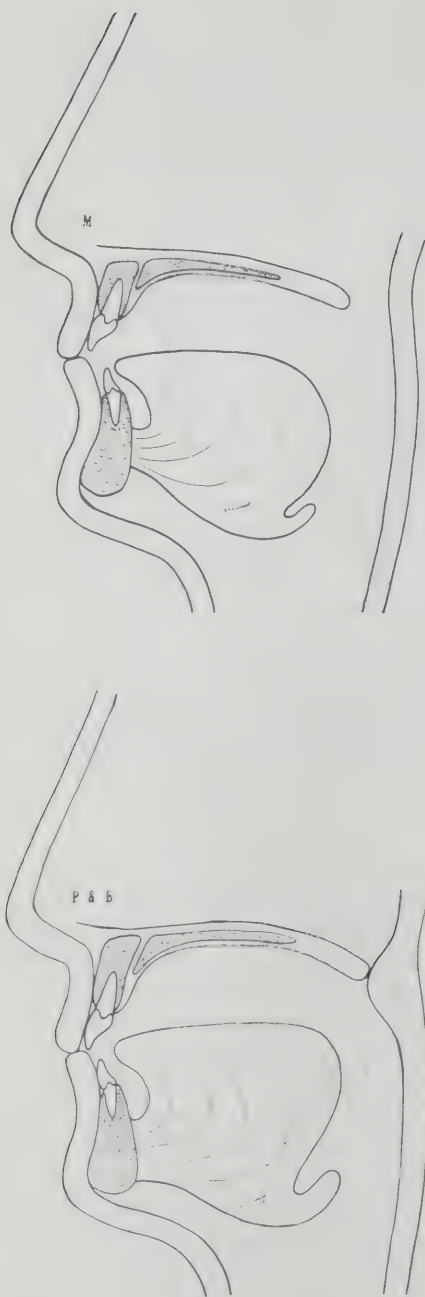


FIGURE 5

Consonants P, B and M. Site of articulation—lips.

self. P is unvoiced and its voiced mate is B, the formation of which is otherwise identical with P. Both of these consonants are formed with the pharynx closed. But, open the pharynx at the time of making B, permit the sound to pass through the nose, and M is the result. These three consonants are called labial because the lips are principally concerned in their formation. The tongue does not necessarily come in contact with the roof of the mouth in their formation. Any such contact is only incidental and dependent upon the vowel-sound with which the consonant is joined (pay and paw). Any restriction of the free movement of the lips, such as too long or too thick labial flanges will cause difficulty in the formation of P, B and M. With bite-rims in place, examine the lip profile while the patient says the word "Mamma" or repeats the letter M several times. Difficulty in making lip contact indicates too great a vertical opening, and excessive puckering of the lips indicates too small a vertical opening. Trim the upper rim for aesthetics, then trim the lower rim until the two cease to make contact during a series of M M M M M M M M. The plane of orientation should be at the level of the superior surface of the tongue when it is lying flat in the floor of the mouth. In the interest of both function and phonetics bite-rims should be so constructed that they will approximate as closely as possible the width, labio-lingually and buccolingually, of the natural teeth which they replace.

DENTAL CONSONANTS

If the vowel sound AH is stopped by placing the end of the tongue upon the gum immediately behind the upper an-

teriors and its sides along the lingual surfaces of all the upper posteriors as well as the adjacent alveolar border, the sound T is produced. If the tongue makes contact only at its tip, while the sound is allowed to escape at its sides, the consonant L is the result. The pharynx is closed for T, D and L. T is unvoiced, and its voiced mate is D. If now the pharynx is opened so that the sound can escape through the nose, the resultant consonant is N. (Fig. 6.)

While the tongue can adapt itself to changed relations of other tissues taking part in the formation of the air channel, it is not wise to impose too much on the tongue in this respect. Hence it is important to reproduce in the vulcanite the lingual contours of the teeth. (Objection to this will be mentioned later.) In an excessively wide set-up of the upper posteriors the tongue is in contact only in the cuspid area and the air current and sound can escape at the sides. The result will be L instead of T or D. A rather common defect of speech associated with the letter N is caused by a head cold. The three nasal consonants M, N and NG are all affected and become B, D and G respectively. ("My nose is running" sounds "By dose is ruddig.")

PALATAL CONSONANTS

The consonants K and G are formed by an interruption of the air current by the contact of the posterior portion of the tongue with the soft palate, the distal surfaces of the two last molars, and the tuberosities. (Fig. 7.) The pharynx is closed and the small space above the larynx is filled with air until the tongue relaxes to permit an explosion which produces the sounds K without voice and G with voice. NG is produced with a slight-

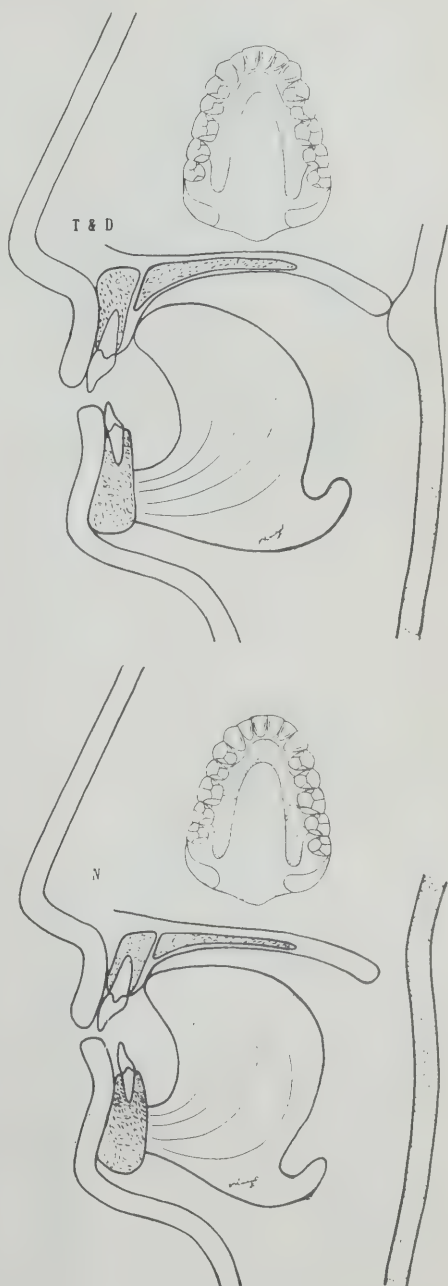


FIGURE 6

Consonants T, D and N. Site of articulation—tongue and hard palate. Shaded area in palatal view indicates tongue-contact.

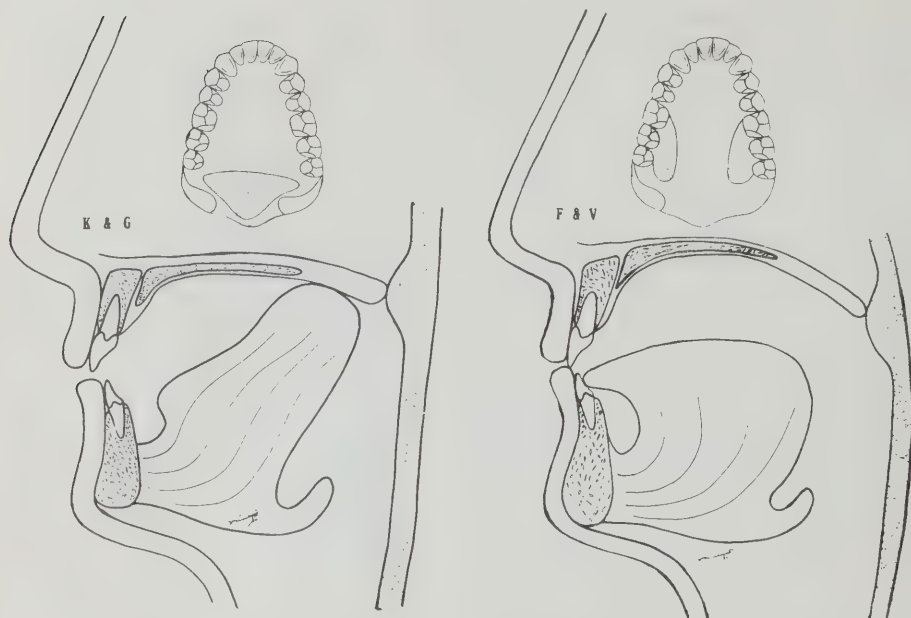


FIGURE 8

Consonants F and V. Site of articulation—lips and teeth.

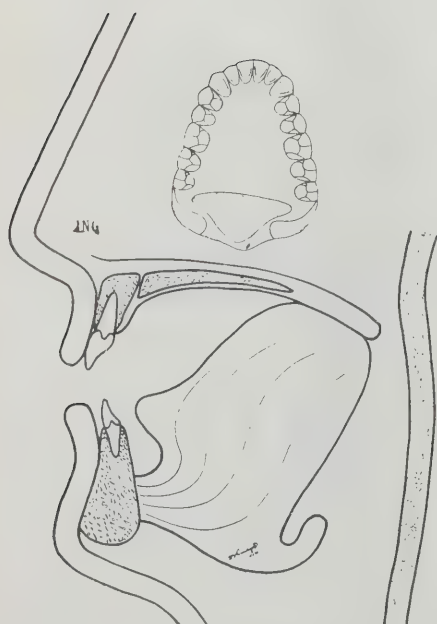


FIGURE 7

Consonants K, G and NG. Site of articulation—tongue and soft palate.

ly larger tongue contact and an open pharynx. (Fig. 7.) In a cleft palate, K and G become H ("conquering" sounds "honhering"). About 90 per cent. of patients will have difficulty with these consonants when the denture is first put to place owing to the dorsum of the tongue making contact with posterior margin of the denture; hence the importance of finishing this margin as thin as possible. If the upper teeth are set too far buccally, there is a loss of air and reduction in the explosive force in the production of these consonants. Since the tongue contacts the tuberosities, the vulcanite covering these areas must be finished as thin as possible also. A common laboratory error is to finish off the vulcanite flush with the occlusal surface of the last posterior tooth.

There is another class of consonants, made principally in the front of the mouth. Instead of being interruptions to vowel-sounds, they are continuous, and are the result of an air-current being driven through a small aperture. They may be vocal or not. Ask the patient to say the word "before" and note the change in the mouth action passing from the sound B to the sound F. The lower jaw and lip move backward and upward till contact is made between the crest of the lower lip and the incisal edge of the upper four incisors, producing a leaky valve sound. (Fig. 8.) F is a quantity sound and can be given in different degrees of emphasis. In the word "if" the F is passive, but in the word "fire" the muscles of the lower lip become tense and the pressure against the upper teeth increases, giving almost an explosive sound. In the F sound there is no voice. The voiced mate is V. In these two sounds the tip of the tongue is in contact with the lingual surfaces of the lower incisors, while its sides touch the lingual surfaces of the upper second and third molars, and two small areas on the palate medial to these teeth. The pharynx is closed during their formation.

The denture difficulties are in the incisor region. If the lower teeth are too high, it will be difficult for the patient to cover their edges with the lower lip, while contacting the upper four incisors. If the upper teeth are too long or set too low, the active F as in "fire" is killed as not enough air will escape. If the flange of the lower denture is too thick or too long, the free movement of the lower lip in covering the edges of lower incisors, upon which the upper incisors rest, will be interfered with.

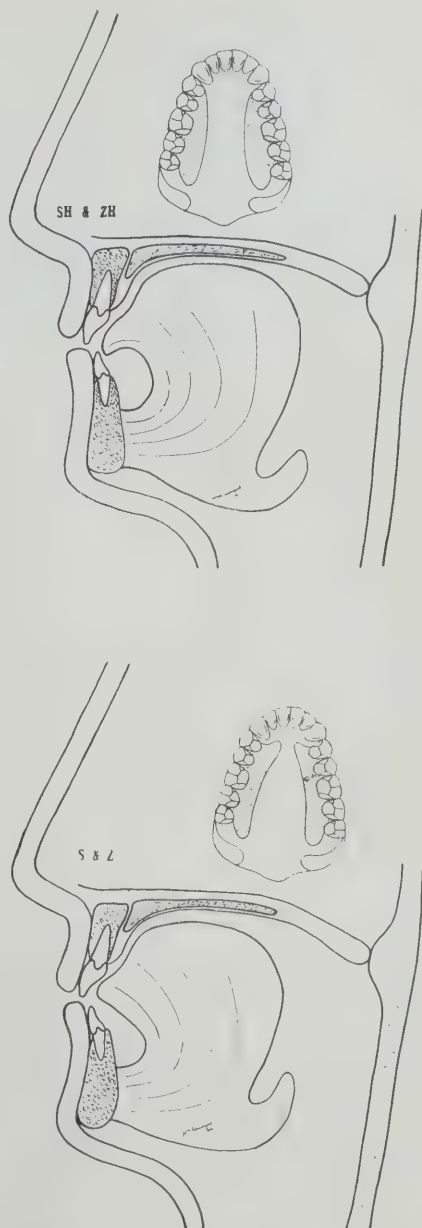


FIGURE 9

Consonants S and Z. Site of articulation—tongue and hard palate, (forward).

Consonants SH and ZH. Site of articulation—tongue and hard palate, (back).

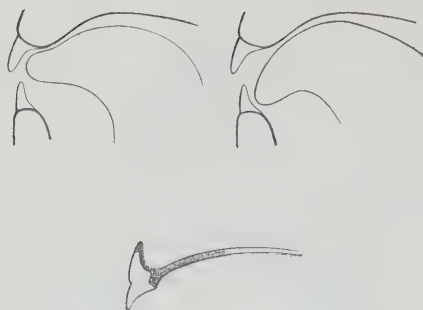


FIGURE 10

Showing relation of tongue to "reverse curve" in formation of S (upper left) and SH (upper right).

Lower left shows cross section of an average full upper denture in which "reverse curve" is not reproduced. (Turner and Anthony).

S, Z, SH, ZH

This group of consonants are produced with a continuous flow of air. In forming S and Z (Fig. 9) the tips are slightly open, the sides of the tongue curl up and make contact with the lingual surfaces of the bicuspid and molars and the adjacent alveolar borders. The tip of the tongue rests behind the upper incisors, and a narrow slit-like opening is left between the tongue and the palate in the rugae area. The sound is caused by the expulsion of an air current past the edges of the upper and lower incisors. This air current must be directed over the centre of the tip of the tongue. The mandible is raised and protruded slightly, and the incisal edges of the teeth are very nearly in contact. S is unvoiced and Z is voiced. The pharynx is closed.

SH and ZH differ from S and Z respectively as follows: (Fig. 9) the mandible is not protruded; the tip and sides of the tongue are drawn back so that there is no contact with the first bicuspid; the posterior part of the tongue is arched to nearly touch the

palate; the air column is expelled through a wider and higher aperture, and is obstructed by all six upper and lower anteriors. SH is unvoiced and ZH is voiced. In an inebrate there is a lack of coordination, with the result that the tip of the tongue cannot be so definitely extended to direct the flow of the air over the centre of the incisors. The clear sharp S becomes SH or ZH.

SPEECH DEFECTS

It seems to be generally agreed that by far the greatest number of speech defects experienced in the wearing of full dentures are caused by difficulties with the consonants in this group. The main defects are:—Sigmatismus interdentalis, or lisping. Lisping may be caused by:—

1. The upper denture being too thick in the rugae area, or just anterior to this area, preventing a clear passage for the air between the tongue-tip and the palate.

2. The upper denture being too narrow in the bicuspid area, owing to these teeth being set too far lingually. This causes a crowding of the tongue which results in a contact with the upper anterior teeth or with the area just posterior to them.

3. An abnormally large tongue.

It is very important that the upper anteriors should be set in the same positions antero-posteriorly, that the corresponding natural teeth occupied; i.e. when the labial plate has absorbed, or when it has been removed by surgery, the upper anteriors should not be set on the ridge, but slightly anterior to the ridge.

Sigmatismus stridans,—hissing and whistling.

These defects are especially noticeable in the S that follows D, T or N, as in

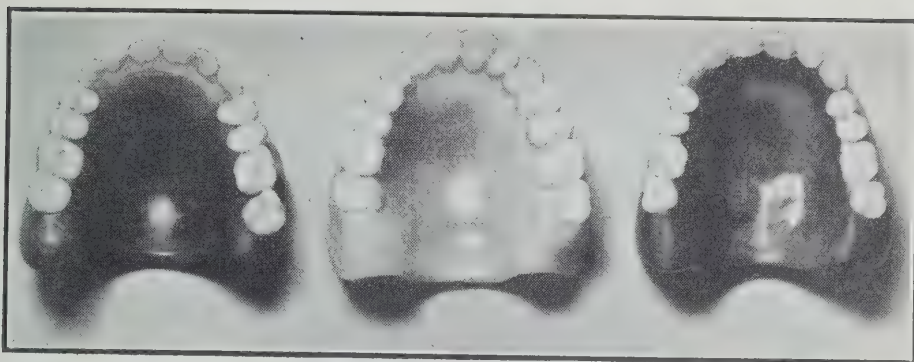


FIGURE 11

Three uppers of five full denture sets made for a singer within a range of five years. The denture on the left above was No. 1. These teeth were occluded to natural lowers and caused no phonetic difficulty. No. 2 was made two years later with a new full lower after the extraction of natural lowers. Difficulties in both singing and speaking set in, and persisted, due to (a), failure to reproduce "reverse curve". (b) Over-extension of the posterior margin upon the soft palate, causing a defect of the vowel "oo" in the middle of the singing voice range. No. 3 (on the right) was made by a third dentist and also failed to reproduce natural tissues and set-up shown in No. 1. A fourth set was made by a fourth dentist which the patient was wearing when she presented. This set was beautifully balanced but also failed to correct the phonetic difficulties.

Treatment (a) No. 1 was relined and a new lower set up to it. (b) The reverse curve was added to No. 4.

the words "rods," "hats," and "bans." It would seem that hissing and whistling are different degrees of the same defect, which is the result of an excessive or incorrect escape of air. In hissing, a greater quantity of air escapes and through a wider aperture, than in whistling. Whistling is more likely to be found in a patient who enunciates with more emphasis; in other words, where there is more pressure in the air current. Frahm and Turner have stated that the main cause of whistling is failure to reproduce correctly the normal anatomy between the rugae area and the lingual surfaces of the incisors. In most mouths there is a convexity in this area known as the reverse curve. (Figs. 10 and 11.) Whistling may frequently be corrected by building out the reverse curve in a denture where it has not been reproduced. Other causes of either hissing or whistling are:—

1. Upper anterior teeth set too far labially.

2. Short, thick upper incisors, known as short-bite teeth. In regular Trubyte there are three short-bite moulds, viz., 1ES, 2CS, and 2DS. In the new Trubyte there are 16 short-bite moulds.

3. Posterior teeth set too far buccally, making tongue-contact difficult.

In the formation of the consonant TH, (Fig. 12), the tip of the tongue is protruded and it makes contact with the incisal edges of both the upper and lower 6 anteriors, past which the air is allowed to escape, but with considerable resistance. Firm contact is retained by the sides of the tongue with the lingual surfaces of the upper bicuspid and molars. TH is formed with the pharynx closed, and it may be voiced as in "thee" or unvoiced as in "thick."

The chief denture problem involving TH is not the difficulty in forming it but

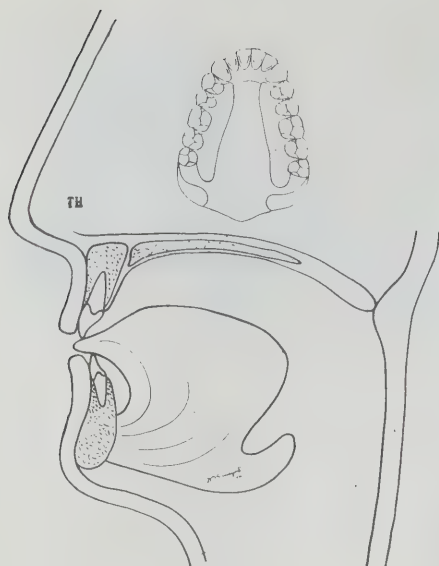


FIGURE 12

Consonant TH. Site of articulation—tongue and teeth.

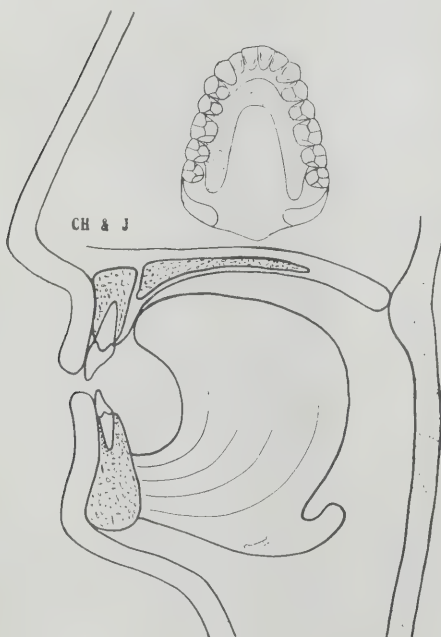


FIGURE 13

Consonants CH and J. Site of articulation—tongue and hard palate.

rather than of overcoming its excess. This has been discussed under the letter S. There is, however, a defect of TH resulting from setting the upper anteriors so far labially that the tongue cannot properly contact their incisal edges, but instead reaches the D or T area, resulting in the word "thin" being pronounced "tin."

The sounds heard in the articulation of CH and J (Fig. 13) are actually combinations of Tsh and Dzh, the former being unvoiced and the latter voiced. They can be produced with the tongue as far forward as the lingual surfaces of the upper incisors, and as far back as the centre of the rugae area. The sides of the tongue make contact with the lingual surfaces of the upper bicusps and first molars and adjacent alveolar border. The mandible is raised and the pharynx is closed during their articulation. Since the tongue position and action so closely resembles that seen in the consonants S, Z, SH and ZH, the denture difficulties are minimized by the precautions outlined in the discussion of these letters. The fact that the mandible is raised during the formation of CH and J, presents a further speech defect and also provides an excellent check on the vertical opening of the bite. During the try-in, ask the patient to swallow and then to say the words "church," "George." There should be, in a correct opening, a contact of the teeth barely audible to the patient. In an excessive opening there will be excessive contact, or the defect known as clicking.

In sounding the consonant R, the oral cavity corresponds with that in the production of the vowel AH. In fact many people sound R so slightly that it is little if anything more than the vowel AH. But the formation of R requires that the tip of the tongue should be pointed up-

ward and vibrated while the current is passing.

It is a fact that the loss of teeth and the changes in the surrounding tissues incident thereto cause slight alteration in the quality of the voice; that speech, rather than voice is chiefly affected by these conditions; and that the production of vowels is less affected than the production of consonants. It is a further fact that the chief alteration of conditions affecting consonant production are the loss of the tissues upon which the current of air is projected, or those at the site of which the current of air is stopped, and the loss of tissues concerned in the formation of the channel through which the air is forced. It is with remedy of these conditions that we are mainly concerned.

Slight alterations in the tone of the voice will occur when any artificial denture is placed in the mouth. These are, in many instances, so slight as to be well-nigh indistinguishable, while in others the difference may be quite noticeable. This consideration, however, is not of paramount importance in the design of dentures. But we are vitally concerned with the defects of speech that follow the insertion of dentures. Thinness of the plate which covers the palatal vault contributes more than anything else to retention of normal articulation. Other factors affecting the phonetic relation of a denture are:—

1. Form, location and arrangement of the teeth.
2. The conformation of the lingual surfaces of both the upper and lower denture.

These factors are to be so considered as to permit as free as possible a movement of the tongue, and the correct for-

mation of the air channel, and to provide for the obstruction of the air current at the proper places. Fortunately the form and arrangement of the teeth that meet the requirements of function and aesthetics, in general, best meet the requirements of phonetics. This is equally true of the conformation of the lingual surfaces of both dentures. To be specific—The labial flange and lingual surface of the lower denture should be finished as concave as possible (in a vertical direction), so as to accommodate the lower lip and tongue respectively. The lingual surface of the upper denture should reproduce as accurately as possible the natural tissues. With this end in view some prosthodontists recommend the reproduction of the lingual surfaces of the teeth in the vulcanite. Others contend this creates a food-trap and is therefore unhygienic. Articulation and mastication are further assisted by the reproduction of the rugae.

Due to the fact that the maxillary buccal plates absorb after extraction or are mutilated during extraction, or both, to a greater extent than the mandibular buccal plates, frequently the prosthodontist is confronted with an upper alveolar arch that is narrower from the buccal of one ridge to the buccal of the other ridge, than the lower alveolar arch; and this in a mouth which previous to extraction was normal in this respect. In these cases the adoption of a common procedure in setting up the teeth, viz., to set up the uppers to the requirements of function and aesthetics, and then to occlude the lowers to this set-up, would result in the posterior teeth of the lower denture being lingual to the ridge. The consequent cramping of the tongue would cause untold grief. In many cases seri-

ous difficulties will be avoided by the employment of French's or Sear's teeth, or by grinding away the lingual cusps of the lower posteriors, partially or entirely according to the extent of tongue-cramping. One eminent prosthodontist recommends the substitution of lower bicuspid for lower molars.

SETTING UP TEETH

A very successful method of setting up teeth is, as follows: First, set up the upper six anteriors, then the upper first bicuspid, then the lower first bicuspid, then the remaining lower posteriors, then the remaining upper posteriors. The space left for the lower anteriors will depend on the amount of overjet. Suitable teeth for this space may now be chosen and set to place. For further details of setting up teeth, refer to Doctor Frank Cole's article in the March issue of the *Dominion Dental Journal*, page 69.

IMMEDIATE DENTURE SERVICE

Immediate denture service affords a distinct advantage in the avoidance of phonetic difficulties, because the dentist can see, and make records of, the palate and the form and position of the remaining natural teeth, before extraction, and with the records before him he can accurately reproduce these tissues in the denture.

SUMMARY

In general summary, it may be stated that from the standpoint of phonetics all artificial dentures should:

1. Restore any lost portions of the apparatus necessary to the production of speech.
2. Offer no impediment to the normal articulation of speech sounds,

3. Produce the least possible alteration in the tone or timbre.

In conclusion, may I stress the fact that humanity is blessed by a bounteous nature, which offers compensation in many respects for loss or mutilation of tissue (as for example the sixth sense of the blind), and it is our very good fortune that nature is particularly generous in phonetic compensation. This fact does not, however, relieve us from the obligation of assisting by every means within our power that bounty which Alexander Pope has described in the following verse:

*"Nature to these, without profusion, kind,
The proper organs, proper powers,
assigned;
Each seeming want compensated of
course,
Here with degrees of swiftness, there of
force."*

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PRACTICE BUILDING

By H. C. VISICK, L.D.S., London, England.

(Abstract of paper published in *British Dental Journal*, April 15, 1935.)

AFTER thirty years of practice, there are certain things which the author regards as fundamental.

The discussion centres around the surgery and methods employed in practice.

A man who is a very second-rate dentist from the operating point of view, may succeed in building up a highly lucrative practice if he possesses something else which attracts the public. One must try to see things from the patient's standpoint.

One must not only *be* clean — one must *look* clean. Always wash the hands in front of the patient. Keep saliva ejectors in glass covered jars and never connect to the cuspidor until the patient is in the chair.

Do not have instruments lying around when patient enters the operating room.

Remove instruments and drugs that are not often used, from the cabinet.

Keep equipment in good repair.

It is not good practice to charge for x-ray pictures taken during the course of a visit unless the patient has come specially for that purpose. If the patient cannot afford pictures one deprives oneself of the benefit of the x-ray. (Those

who discussed this paper were not unanimously in favour of taking x-ray pictures without fee.)

Scaling is the very foundation of good dentistry, and while this is being done have dentures polished.

Keep accurate records. It is disturbing to the patient to find that the operator has forgotten what work was to be gone on with.

Get something finished at each visit and make it a point to tell the patient before he gets out of the chair just what has been done. Explain matters as you go along.

Discuss fees in a frank, straightforward, businesslike manner with patients, and base fees on so much per hour.

In quoting fees for dentures, be sure to make clear just what the fee includes.

Plenty of flowers in the surgery and waiting-room are a great asset.

Render accounts promptly.

Patients come to get something done to their teeth, so do not be beguiled into talking about one's holiday or one's golf. When the work is done, talk as much as desired, but do not forget that patients go for holidays also.

Take fast hold of instruction; let her not go; keep her; for she is thy life.—Solomon.

DENTISTRY — WHAT NOW ?

By E. THORBURN CLEVELAND, D.D.S., Montreal, Quebec.

IN recent years there has been much agitation concerning the status of dentistry as a profession, and much has been written and discussed regarding developments and changes for the future. There can be hardly any doubt in the minds of our clear-thinking confrères, who have the interests of the profession dearly at heart, that we are reaching or already have reached a crisis in the educational problems confronting the profession.

Remarkable progress has been made in dentistry in the last few years, so much so that in the very near future we shall be called upon, as a unit, to make some drastic and all-important decisions as to just where we stand with our medical confrères.

There are those who insist that the future of dentistry lies in doing away with the profession as it now stands, and making it requisite for all future dentists to obtain the M.D. degree, followed by graduate study in oral hygiene, dental restorations, etc., and that this change should be tactfully completed before it is forced upon us.

The dilemma which we face seems to be this: Shall we remain a complete and autonomous profession as, for example, optometry, or shall we become a specialty of medicine, as otolaryngology, etc.?

Ever since dentistry emerged years ago from the class of skilled trades and took its place among recognized professions it has been approaching almost impercept-

ibly, but surely, a crisis from which will come the important decision as to its future.

There can be no doubt in our minds, that dentistry and dental practice, the proper training of the man who shall practise dentistry, are to the fore more than ever.

We must bestir ourselves and look about to see what is happening and what, in our opinion, should happen to our profession. There never has been a time in the history of dentistry when more clear thinking and united effort was necessary.

I am urged to point out that dentistry in its earliest recorded state in Egypt was regarded definitely as a learned profession, and strictly a specialty of medicine.

In common with other specialties and professions, it had always its charlatans and short-cut practitioners, but it was not until after the French Revolution that it degenerated to a point where its standing was in question. Since that time the mechanical aspect of dentistry has been stressed by practitioners, to the neglect of biology and physiology. If we have not the tradition of law or medicine, (and at these crossroads we make our decision to stand independent and apart from medicine,) then we must hasten to build for ourselves a definite code of ethics to hand down to those who will follow. The menace of commercialization in our profession must be ignored, for it provokes and retards our progress

in a manner that must disturb the mind of every thinking practitioner. It therefore remains for us to appoint boards and insist that they shall maintain a high standard of ethics which the law will uphold.

Universities have little control over graduates and accept undergraduates with the one standard in regard to money for fees and the necessary matriculation, except in crowded institutions. Therefore we must be represented on provincial boards by those who can and will use sound judgment in the administration of our professional demands.

It is true that the attitude of the public at the present time toward dental and oral health and towards the dentist himself is quite a contrast to what it was fifteen or twenty years ago, because the average well-informed individual is cognizant of the systemic disturbances resultant from dental disorders, yet we must, as an organized unit, strive to better ourselves and stamp out at our universities and institutions any tendency toward a graduate who will taint or impede the right spirit of progress.

It is somewhat true that the past achievements of dentistry have been lacking in the element of romance and spectacular results as shown in other professions, but the latent possibilities of dentistry as a profession are many, and it requires only the proper nourishment and guidance so that in the future we may take our stand and receive recognition from our medical associates.

It is unfortunate that so many physicians adopt a superior attitude, where the dentist is concerned. The average physician does not depend on the dentist to give him information. He takes or discards it as he pleases, and rarely gives the dentist the recognition he merits.

This can only be due to one or two reasons—that the fundamental knowledge of structure, function and disease has not been developed in relation to the teeth to the extent that it has in relation to other parts, or that the physician feels that the dentist has inadequate knowledge of pathology and physiology. So far as restorations are concerned, he fulfils his purpose, but for x-ray or clinical diagnosis, he can be dispensed with.

Recognition by our learned associates



E. THORBURN CLEVELAND

of the fact that our training definitely puts us in a position to be placed on a level with themselves is seemingly ignored. It is true, however, that the attitude of the M.D. has somewhat changed in our favour in the last several years.

We now have internes in most of the large hospitals, and gradually our medical confrère is realizing that the dentist is just as skilled in his branch of the healing art as the average specialist in medicine and surgery is in his. In fact, I am prepared to say that the graduate in dentistry, following his two preidental years and four-year course, is better prepared to cope with the requirements of his calling than the graduate in medicine. It might be wisely brought to notice at this point that where there is agitation for the D.D.S. to have further medical training it might be also a splendid departure for the M.D. to have more dental knowledge.

The medical profession must not lose sight of the skill which is daily exercised by his dental friend and although in dentistry that skill rarely represents the saving of a life or a limb, yet nevertheless it is skill and is indispensable to the world at large.

However, we will have in the future only ourselves to blame for the attitude of the public or medical man towards us. We must give willingly of our time, regardless of sacrifice, to aid and support any and all movements that will advance the standards of our calling and its usefulness. We should feel an innate dread of any misuse of professional knowledge or abuse of confidence that the public must necessarily place in a professional man—and we *must* resent the activities of the advertiser and those who would

tend to cheapen and undermine our status.

If we stand alone and do not yield to the urge to become a specialty of medicine, then we must establish a more rigid code of ethics. The time has come when we cannot afford to sit back and wait for some confrère or group to make the moves which will proclaim our ideals. We must each and every one of us stand as one solid unit against those who seek to practise for monetary gain alone, and who would perpetrate schemes which tend to place us in the field of trade and commerce.

If we intend to keep a professional status, to gain and hold the esteem of the public and the recognition of medicine, and to proclaim ourselves independent, with no need for an M.D. degree—then we must bestir ourselves and train the dentist of tomorrow accordingly. We are graduated as doctors. Actually speaking, the term "doctor" so erroneously used for physician and surgeon, is the mark of a standard of learning, bestowed by a university or institution of learning upon those who merit the same. There are doctors of medicine, philosophy, divinity, music and dentistry. To be thus hall-marked places us on a certain level among men of learning and dignity. To hold that esteem we cannot afford to allow even one of our number to fall below the required standard.

If, on the other hand, we find that there are those in our midst inclined to ignore the status of a profession and the exacting demands made on its members, then we can only wonder if, after all, our intelligence is not worthy of the doctor's title, and whether or not we are to be relegated to the level of a skilled artisan.

We shall be obliged to act quickly and

decisively, in the midst of the present agitation,—the drive to move dentistry to a specialty of medicine, the demand that as a specialist of the mouth and teeth, he shall obtain an M.D. degree—this on the one hand; and on the other, the tendency for members of our calling to act and practise in an unethical and unprofessional manner, and to place themselves (and drag with them the name of dentistry) upon a level where we cannot hope for recognition and esteem among those whom we serve. Let us therefore put on our thinking caps and plan for the future. Shall we be in five or ten years—a specialty of medicine, controlled by the Medical Act, and questionably more adapted to practise dentistry more expertly; or shall we, by virtue of a lack of united effort in holding the members to the significance

of our calling, be relegated to the class of skilled artisan trades, with permission to advertise and act in a manner unfitted to a doctor or member of the healing science,—or with one accord proclaim ourselves true dental surgeons, with all the ideals associated with the other professions? All professions have to do with human well-being, and no profession can develop successfully unless it has a broad conception of life. In the future, therefore, let us hope that our teachers, students, and practitioners will work together so that recognition for service will be increasingly ours and that our best efforts will be put into our daily work, to broaden our knowledge and perfect our workmanship.

311 Birks Building.

MONTREAL DENTAL CLUB

The Eleventh Annual Fall Clinic under the auspices of the Montreal Dental Club will be held at the Mount Royal Hotel on October 17-19, 1935.

Clinicians and subjects are as follows:

Dr. C. W. Bierman, Minn.	Children's Dentistry.
Dr. U. G. Rickert, Ann Arbor, Mich.	Materia Medica & Therapeutics.
Dr. V. H. Sears, New York City.	Full Denture Construction.
Dr. H. W. MacMillan, Cincinnati, Ohio.	Oral Surgery.

Manufacturers' table demonstrations.

Group discussions under able leaders.

Clinic by and for dental assistants.

Dinner Dance—Mount Royal Hotel, Friday, October 18.

The Mount Royal Hotel offers special rates to visiting dentists.

Membership fee—Non-resident—Five dollars—Resident—Ten dollars, including complimentary luncheons.

Chairman, Publicity Committee,
F. W. SAUNDERS, D.D.S.,
1414 Drummond Street,
Montreal, Canada.

COLLECTIONS

Presented by MISS JESSIE M. RITCHIE, Reg. N.,
Secretary to Dr. John A. Bothwell, Medical Arts Bldg., Toronto, to the Toronto Forum of
Dental Practice Management, March 11, 1935.

THE subject I was asked to write about was anything but an inspiration to me. The word itself savors so of the mercenary—and to me a mercenary thought should be as far removed as possible from any professional mind. The only wealth a professional man should have a desire to accumulate, is one that is not at the mercy of financial depressions or stock-market crashes. If one concentrates all his efforts on making a life he will not have to give one to making a living.

Tonight we want to focus our thoughts particularly on the phase of life-making that is manifested through daily occupation. Yours is Dentistry. Your goal is practice-building and the governing principle of your every effort should be "SERVICE." The ideas emanating from this principle radiate along three avenues—one to the patient, one to the dental profession and one to the dentist's own character. The materials used for this building are many but they are all intangible though very real. Some of them are Ability, Energy, Confidence, Faith, Honesty, Courage, Perseverance, Wisdom, Selflessness, Sincerity, Humility, Gratitude. If these qualities are put to work along with technical knowledge and understanding, you will find removed from you the irksome task of making a living. But the living will be made all right—have no fear about that. You need money, of course you do—because on

this material plane it is the medium of exchange and without it we could not procure material necessities. But if we work with and aim for the things which cannot be bought with money we'll find the money will come along all right. This probably sounds like a pretty sentiment but it has been proven. It is in accordance with the ever-active law of compensation, and it is really out of your hands. When you realize this, you are relieved of a false sense of responsibility and nothing so cripples integrity as the feeling of carrying the world's burdens on our shoulders.

THE COMMON VIEWPOINT

This introduction is apropos of the specific subject about which I have been asked to write—"Collections." My impression of the way most young men think about collections could best be described in the following illustration: They graduate in dentistry; they begin to practise; patients come along. As dentists, their chief aim is to render the best service they know how and they're so idealistic, they'd love to be able to render it gratis. They are mesmerized by a false concept of charity and this thought serves as a sedative: "O, isn't it grand? I won't have to mention money. I'll do the very best work that can be done. My patients couldn't help but be satisfied and when I send their accounts their cheques will come by return mail. They know I've

JESSIE M. RITCHIE



done conscientious work and that I'm just starting out in the world and they couldn't think of keeping me waiting; and even if they shouldn't send them the first month, they certainly will the second or third—and if they shouldn't—oh well, that's in the far-off distant future; I won't have to think of that for a long time yet. O! collections! the word makes me shudder.” And so, on they go until before many months they have many hundreds of dollars on their books. And from that minute on, Dentistry begins to suffer. If there is one thing that obscures mental vision and suffocates ability it is the carrying in thought the picture of a ledger whose debit columns total a figure that makes the credit columns look deserted. And yet this picture was brought about because one or two of the positive thoughts mentioned above were left out of the mental equipment that represents sound office administration and because some of the others were worked overtime. My idea as regards the management of a dental practice is that the department of accounts should receive as careful thought and forethought as the carving of an impression for an oral restoration. When it does, the efforts toward the collection of an account are made before one dollar is in its debit column. Done this way, the situation is being handled in the fairest way to the patient; and with this thought in mind it ceases to be associated with unpleasantness because it scarcely has the complexion of the monetary. It will give the

dentist, on the other hand, a sense of joy because he knows that before he begins any dentistry he and his patient will stand on the plane of mutual agreement. He is going to present an estimate and make arrangements for payment before any service is rendered. This will relieve his patient's mind of all doubt of the figure that will appear on his statement and his of all doubt as to whether that amount will meet with his patient's approval as well as all fear of any protest or delay in its payment. Both he and his patient will know what the maximum fee will be and how the obligation will be met. Can you appreciate the tension he will be relieved of as the result of—what?—the steps for collection being a memory instead of an anticipation. I can think of no more unpleasant thought looming dark on the horizon of the future.

FIRST STEP

You would probably like to visualize a specific case handled in this way. We are

in the office of Dr. Smith. A new patient enters. We shall call her Mrs. Green. Seating herself in the dental chair, she proceeds according to her custom: "Dr. Smith, there seems to be something the matter with this tooth." She probably places a jewelled finger in the oral cavity and points to the tooth which she considers the offender. Right here Dr. Smith takes his stand, kindly, of course, but none the less firmly, in what, without even being conscious of it himself, is the *first step in the collection of this patient's account*. It hasn't the complexion of collection procedure, has it? But it is, nevertheless. Why? Because unless he breaks down in the patient's mind that wrong concept regarding the value of a dental service, unless he replaces a wrong idea with one he knows to be right, he has failed to serve his patient—and his profession—honestly, and he has been unfair to himself. And if he fails before he begins, what right has he to be paid? I say "None." What right has he even to put a restoration in an individual tooth without knowing all he can find out about the mouth, that Dental Science has taught him? Right here he is aware of a wide mental breach between him and his patient. All right. He is well qualified with technical knowledge so he does not lack confidence in his ability to sow the seed in her mind that will bear the fruit of appreciation of her need. To do this he uses as well as his knowledge of dentistry, the building materials which should be part of every office equipment. Honesty, Courage, Sincerity and Wisdom are especially valuable for rendering this part of his service—for even this is a service. Dr. Smith does not talk "over her head"—he meets Mrs. Green where she is mentally and in substance tells her

that in his office all treatment is based on a complete oral diagnosis and that a complete diagnosis is impossible without a complete examination and that in giving advice there are some factors outside the mouth that must even be taken into consideration. The patient now cannot but realize that for him to proceed any other way would be dishonest from his point of view and a risk to her, physically, mechanically and financially—a risk neither she nor Dr. Smith could afford to take. Well, now that this educational service has been rendered in such a way that an intelligent mind could not fail to desire it, Dr. Smith finds no reason for hesitating, right at this juncture, to quote his fee for Complete Oral Examination, Diagnosis and Advice. In my experience I know that the percentage is less than one that fails to subscribe. I often think we are inclined to lay down a law of limitation on other people's intelligence—and really there isn't one. No one can fail to understand and appreciate the value of this most important examination service if a dentist will only take time to acquaint his patient of it. The appreciation in the mind of the patient cannot be any greater than it is in the mind of the dentist, and if it isn't important enough to stress it really isn't important to him. So how could he expect it to be to the laity?

REMAINING STEPS

Well, in this case, Dr. Smith's patient subscribes to the examination service. When it is completed and the findings summarized, the diagnosis is made and the advice given. Dr. Smith is now in a position to estimate on a complete oral reconstruction. He carefully computes what the cost should be to the patient,

which of course will include the fee previously quoted for the diagnosis. He goes into his plans with Mrs. Green, and where a selection of services could be rendered to give adequate results, he acquaints her with these. I feel it is the patient's right to make the choice. A dentist's responsibility ends when he knows he has made it clear to his patient the advantages and disadvantages certain services have over others. The discriminating tastes of the laity can be carried even into a technical field if the presentation is made as it should be; and in every decision where money is involved the purchaser deserves the right to make the choice. Mrs. Green decides the type of service she would like to have and Dr. Smith tells her what the services she has selected will cost. He may find it necessary, in answer to her questions, to quote his fees for one or more of the options, but if not she accepts the estimated figure. The *second* step in the collection of his account has been completed and the third is easy and natural. "And now, Mrs. Green, how would you like to take care of the account? It is customary for my patients to make a payment of at least one-third on the first appointment and the balance upon the completion of the service." If this arrangement meets Mrs. Green's convenience so much the better; if not, the way has been opened for the suggestion by her of definite terms on which both she and Dr. Smith will agree and which either Dr. Smith or his nurse will write down in the presence of his patient. This serves as a protection to him against any future delinquency which, if such ensues, can be handled with so much more assurance and confidence than if a financial arrangement had not been made. So endeth the

third step in the collection of the account. Now, and still before any services have been rendered, a *fourth* step is taken. On the day on which the contract is made verbally in Dr. Smith's office, a confirmation letter recording a summary of the services to be rendered, the estimate which has been accepted and the terms agreed upon is mailed to the patient. This fortifies Dr. Smith to the Nth degree against any misunderstanding and rounds out a plan for a perfect service to his patient and to Dentistry. I feel keenly in handling a case this way, that a valuable contribution has been made to the dental profession, because this systematic procedure and instructive educational talk before any reconstructive work has been done cannot help but have elevated the patient's concept of a dental service. And we all have to admit that the laity's idea of this important branch of medicine is not on the plane it should be. In proportion as each member of the profession strives to elevate this plane the profession at large will be benefited. A dentist's duty is always three-fold.

In my judgment the foregoing procedure presents the ideal method for the collection of an account. As I wrote my paper up to this point I could not help wondering if this would be your idea of collection procedure, or if you would expect my subject to be handled in the way most collections are handled—dating from the time the account is transferred from the department of accounts to the department of collections—this generally being at least three months after the account was first rendered. If so, you will be disappointed.

I am, however, going to touch on situations that arise when this procedure is not followed, because my experience has

not altogether escaped problems brought about by tactics which "missed the mark"; but I must admit that as soon as I began to write about the second and third rate methods I experienced the feeling that my paper had dropped in quality.

SECOND RATE METHODS

If the routine I portray in the first part of my paper has not been followed, the collection department is faced with a situation which is not easily handled—one which cannot be attacked with the same degree of confidence in success. I shall outline a routine which I follow when neither an estimate has been given nor terms arranged. A statement is sent two months in succession with no added suggestion for payment. The third month, if nothing has been paid, the statement bears the words, "Your cheque will be appreciated." If this meets with no response, a note bearing the doctor's signature accompanies the next statement, asking for payment by a definite date. If there is still no response a letter bearing semblance of pressure is sent. I think there should be no stereotyped form for correspondence but that each note or letter should be composed, taking into consideration the amount of the account, the length of time it has been outstanding and the temperament of the patient. Wisdom should flavor every word that bears a dentist's signature. When this is adhered to, the results should be satisfactory. But I know you will experience an attitude towards accounts in this category that is devoid of security.

TERMS OVERLOOKED

Now another situation presents itself to the accounts department. It is the case where terms have been arranged but

not lived up to. The fact that you had a definite agreement gives you a stronger defence from which to operate. I think not longer than one month should be allowed to elapse following failure to receive a payment which has been promised; then a definite time should be set on which the patient should be heard from. If the request is not complied with on the date set, it should be followed with a second letter within three days. When definite terms have been agreed upon, there is no good reason for the patient not giving an explanation at least, and if this fails, pressure must be asserted. Everything is in the dentist's favor. The patient has accepted an estimate and agreed upon terms for payment. If circumstances have been such that the contract cannot be lived up to it is only fair that an explanation should have been given. If it wasn't, and if his letters are ignored, he might just as well, first as last, inform the delinquent that it will be necessary for him to place the matter in other hands for collection. I think it is wise to set a date in this case, too. And once he has, he should never fail to transfer the account to his collection agency or solicitor on that date. No further leniency is due the patient.

CONCLUSIONS

Now I am sure from the illustrations I have cited, you cannot help but see from the viewpoint of collections, the value of putting the right ideas to work before any service further than your diagnosis is rendered. I feel so certain that proceeding in this way you will gain a mental freedom that you cannot experience in any other way in the practice of your profession. Desirable results are nothing but the inevitable harvest of the

seeds of right ideas; and in dentistry right ideas should not be alienated by the technical departments. "A professional man is a business man whether he likes it or not", and such being the case every department outside of the operating-room should have incorporated into it the same earnest effort and meticulous detail that a technical operation deserves. Guesswork should be eliminated from every endeavor under the professional roof. If your plans for every case radiate from the central sun of Service along the three

avenues—to your patient, to your profession, and to your own character—you haven't a thing that will require guessing about. "There is nothing so practical as the ideal," for nothing but the ideal is worthy of your efforts. And when you reach a stage in your process of thinking where you recognize money as an effect—and not a cause—of success, you will have begun to know the meaning of the words, "The kingdom of heaven is within you".

Medical Arts Building.

CASE REPORT

DELAYED UNION IN FRACTURED MANDIBLE

CASE reports of bony union of any bone, long after all hope of obtaining such union is given up, are sufficiently rare in the literature to be worthy of record. The following case may also bring some hope to cases where there does not seem any possibility for firm union.

Mr. K. D., aged 40, received a comminuted fracture of the left mandible, just anterior to the angle in an industrial accident on April 6th, 1931. He was treated privately until May 9th (the Workmen's Compensation Act of this province at that time did not, and probably still does not, pay for treatment of fractured jaws for a longer period than 28 days, except under very special circumstances) when he was admitted to the Victoria General Hospital for treatment. I saw the patient, on that date, in consultation with a member of the surgical staff. The case presented the typical appearance of a unilateral mandibular fracture, compounded into the mouth. There

was a considerable swelling, with fluctuation of the soft tissues, about the angle, externally. The case was diagnosed as unilateral mandibular fracture with acute osteomyelitis. On x-ray examination, the fracture was seen to be badly comminuted with one large fragment wedged between the two ends, keeping them apart. The remains of a molar root were also visible in the fracture line. Drainage was established and the root removed. No attempt was made at this time to splint the fracture, as position was relatively good and the patient very sick. The case made good progress and a sequestrum removed on June 16th. It was felt that as two months had elapsed and there was still some discharge, there was not much hope of obtaining bony union.

The external wound healed early in July and it was decided that at a later date, when the wound was fully healed, a bone graft would be attempted. The jaws were wired together on July 14th, with the cyelets and secondary wires of

22-g brass ligature wire, as practised by Ivy, to prevent the two free ends of the bone being drawn together, as there was from approximately one-eighth to three-eighths inch separation, which would result also in lateral displacement of the anterior fragment towards the fractured side. The case was seen at regular intervals until Oct. 17th, 1931, when the wound was completely healed, with the articulation of the teeth in the same position as before the injury. X-rays were taken to check progress and also to determine if there had been any filling in of the bone. Pictures at this time showed the two fragments in good general position, but still with the same amount of separation between the ends and with no evidence of new bone formation. Any danger of lateral displacement by scar tissue contraction was now thought too slight to warrant retaining the jaws wired together any longer, and wires were removed. There were no teeth posterior to the fracture so it was not possible to hold the ends in position in any other way. There was at first some limitation of jaw opening, but this disappeared with yawning exercises. The patient at this time had a fibrous union at the fracture site, which while it allowed quite a bit of movement, still permitted careful use of the jaw. The patient was dismissed and instructed to report at intervals for observation until such time as it was felt an attempt to bone graft might be attempted. He was unwilling to have it done at this time. He did not report and was not located until the middle of March, 1932, when he was again x-rayed and conditions were found similar to those of the previous October, with no new bone growth. Clinically, the fracture site still showed about the same

amount of movement. He was still unwilling to submit to a bone graft operation and disappeared until the first of March, 1935, when he reported at the extraction clinic of Dalhousie for extraction of a right lower bicuspid. I was present and remembered the case. Clinical examination showed the old wound to be so firm that new x-rays were taken at the V.G. Hospital when we were all surprised and gratified to find that there had been a substantial filling in of the bone particularly across the centre section and, in the opinion of the radiologist, Dr. S. R. Johnston, every hope that the bone would continue to fill in the small area still left unfilled. The alignment of the teeth is normal for the case, with no lateral drift of the median line. It is possible that there has been some shift in the position of the lateral fragment which helped to close the gap between the bone ends; it is impossible to be positive of this, but the x-ray appearance today is typical of a normal case of bone repair following fracture, with the exception that most of the bone growth appears to have been made by the anterior fragment as the posterior border of the anterior fragment has disappeared, while the anterior border of the posterior fragment may still be traced part of the way across the bone.

The patient has not been under any special treatment and we have no theory as to why this bone should have filled in some time between the dates when he was last seen while undergoing treatment, or about one year after the accident, and today, about three years later.

J. STANLEY BAGNALL, D.D.S.,
Dalhousie Dental College;
Visiting Staff Dentist, V.G. Hospital,
Halifax, Nova Scotia.

THE FORUM

AN INDIAN DENTIST'S DILEMMA, IN THE INDIAN DENTAL JOURNAL, JANUARY-FEBRUARY-MARCH, 1935

AN INDIAN practitioner was faced with a problem that could only have arisen in India. He rendered service to two sisters-in-law, extracting two teeth from the elder and five teeth from the younger. When he was asked what would be his fee, he was told that he must make the bills for both of them alike. Neither of the amounts of any of the bills was to exceed the other, as,

one of the sisters-in-law explained to him, they belonged to the same family, and so the expenses were paid from the joint family fund. The elder sister-in-law was willing to have three more extractions done, even though she did not need them, since they were for a good cause—the cause of the joint family system.—*Dental Outlook.*

TALK DENTISTRY

EVERY minute of the day and night the public is being told over the radio about a million ways to spend its money for a million and one different items, none of which is as important as dentistry. The major portion of our magazines is devoted to the same object, but in spite of all this a few people get to the dental office.

When they do arrive in the dental office, the pitiful thing is that they are not informed of the merits of dentistry, the conversation being about new cars, politics, hard times, etc. The writer knows

one dentist, however, who says: "There is only a little money in my community, and if I expect to get my share of it I must talk about what I have to sell every minute that I can; and when a patient tries to lead me away from the subject of dentistry I simply tell him that I do not see him very often or for very long at a time, and that while in the office I want to talk to him as much as I can about his mouth and about dentistry." Success would follow if the dentist would remember that he was going to talk dentistry to every patient he served.—*Dental News.*

MEDICAL CITY IN RUSSIA

THE Welland, Ontario, *Tribune* says editorially on November 19th that the Soviet Government has selected a thousand-acre site in the Silver Forest on

the Moscow River, a ten-minute drive from the capital, for the establishment of a "medical city," designed to be the largest and most modern institute of its

kind in the world. It is to be under the direct authority of the government, and the results of its experiments in medicine and surgery are to be made available to hospitals throughout the Soviet Union. It will use about one hundred and thirty thousand animals a year, including snakes, monkeys, mice, sheep, rats and porpoises, as well as cats and dogs. There will be a health clinic for the observation of normal men and women after working,

eating and resting. There will be violet-ray treatment of foods. There are to be chambers where the temperature, pressure, and other conditions of different climates, Arctic, sub-tropic, undersea, and stratospheric, will be reproduced for the purpose of studying their effects on living organisms. There will be a personnel of 5,500 doctors, nurses and research workers, with six hundred patients.



Doctor: "You would probably feel much better if you had all your teeth out."

Patient: "Yes, I should, Doctor. This lot never fitted from the day they were put in."

(Reproduced by kind permission of the proprietors of "Punch".)



PRINCE EDWARD ISLAND



W. T. Waye, Charlottetown

NOVA SCOTIA



A. W. Faulkner, Halifax

NEW BRUNSWICK



J. F. Edgcombe, Saint John

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

MANITOBA



J. F. Morrison, Winnipeg

SASKATCHEWAN



F. C. Harwood, Moose Jaw

ALBERTA



John Clay, Calgary

BRITISH COLUMBIA



J. S. Bricker, Vancouver

A TRUE FAIRY STORY

For several years the General Motors Corporation, through its Fisher Body Craftsmen's Guild, has offered a number of handsome rewards to North American youth for skill in craftsmanship.

These boys build a miniature model Napoleonic Coach, such as is shown in the accompanying illustration.

The awards for the yearly competition are valued at \$85,000, made up of six university scholarships of \$5,000 each, two of which are awarded in Canada, and also twenty other awards for each of seven Canadian districts and for every state in the United States.

Building this coach involves a wide range of handicrafts—woodcrafts, metalcraft, trimcraft, and paintcraft. Painstaking attention to detail is essential. It leads to skill in working from plans and to the mastery of tools and materials. Incidentally General Motors has made some most valuable discoveries. It has discovered the geniuses along such lines among the youth of America. In years to come, what may this mean to this great corporation? Obviously it means much to the winning contestants in opening up an avenue to a career of opportunity and achievement.

Any boy who has obtained one of these awards is worthy of special com-

mentation, but for the purpose we have in mind, one only will be specially considered at this time.

In 1933 Harold Rasmussen of Regina, Saskatchewan, who was then about thirteen years of age, entered the junior competition. He made a coach upon which he spent 1,500 hours. He attained second place in Canada, winning \$100 and a trip to Chicago. "Resolve and thou art free," said Longfellow. The day after Rasmussen returned from Chicago he started his second coach for the next year's competition, and upon it he spent 1,700 hours. With this he took first place among all juniors in Canada and all juniors and seniors in the United States. There was only one senior ahead of him, and this was J. R. Farquharson of Vancouver, who had already earned a trip to England by building a model aeroplane on a previous occasion. The judges spent two and a half hours going over each model, but Rasmussen's coach was so superior to the others that they did not go over them a second time.

An interesting factor in Rasmussen's case is that the family was on relief and the boy had to pick up material and tools here and there. Another point of interest to dentists is that the late Dr. Mooney of Regina helped the boy in many ways by giving him old gold and allowing him to use his lathe and teaching him how to bake his casts.

"For want of a nail the shoe was lost;
For want of a shoe the horse was lost;
For want of a horse the rider was lost, and all."

Rasmussen found the nail in Dr. Mooney's office because Dr. Mooney loved boys and had a vision of the possibilities.

As a result of this self-mastery, determination, and natural genius, this boy won a prize of \$5,000 to be given to him as he needs it, the decision being left with the Toronto Trust Company and Mr. George Dolan, senior principal of Collegiates and Technical Schools in the City of Regina, who has done much to stimulate the minds of the youth of the city and province in a variety of helpful activities. A few months ago, Mr. Dolan took Harold to Moose Jaw to address the Trustees' Convention in order to work up a greater interest in that part of the province in similar contests.

Harold intends to finish High School, go in for chemistry at McGill University, and then take postgraduate work along the line of Industrial Chemistry. He is now fifteen and is still eligible for the Junior Competition, but is stepping aside this year in favour of his brother, who is now busy on his coach.

The whole idea of this competition is a most excellent one, and makes one feel that more should be done by our profession in conducting competitions pertaining to dentistry throughout Canada.

From the Dental Journal of Australia we learn of the splendid work that is being done by the New South Wales Branch in conducting School Dental Essay Competitions. The method of instruction is by means of lectures,

Editorial

pamphlets, radio talks, instruction in the schools, etc., and towards the end of each year attractive prizes are offered by the Branch for the best essays upon some simple subject. This year two thousand children are expected to compete.

Many prizes, ranging from two to twenty-five dollars, will be awarded, all prizes being competed for at the respective schools under the supervision of the teachers.

It has been found that a great feature of this procedure is that the children preach the doctrines they are learning to their parents, which makes for a higher standard of national health.

In the province of Ontario considerable has been accomplished in this direction. Contests have been held among the children for the best set of teeth, in which a large number entered, most of the contestants being prepared by dentists. Essay contests have been held also, the subject matter being obtained from illustrated talks (slides and motion pictures) given by the Director of Dental Services. Prizes were donated by Service Clubs and the essays were published in the local papers. A somewhat similar result was obtained also by holding inter-school dental plays.

The Montreal Dental Club has under consideration at the present time a progressive program along these lines for the province of Quebec, and the president, Dr. Bourke, points out how great an advantage it would be to have the Canadian Dental Association sponsor such contests.

As soon as possible, we would suggest that the C.D.A. take steps at least to provide for a nation-wide essay contest among the boys and girls of our country. Prizes of a suitable character could be given and provincial prizes provided as well.

Properly organized, no difficulty should be encountered in raising the necessary funds from the dentists of Canada and the results in the future would be inestimable in the increased interest in mouth health.

"The truest test of civilization is not the census, nor the size of the cities, nor the crops; no, but the kind of man the country turns out."

Coach built by Lawrence Drebert, of Edmonton, Alberta, which won the Senior \$1,000 Scholarship in the 1934 competition.



BOOK REVIEW

COMMON-SENSE DENTISTRY. By Edward Samson, L.D.S., R.C.S. Eng., F.C.S., of Bournemouth, England; with introduction by Professor W. H. Gilmour, LL.D., M.D.S., L.D.S., of the University of Liverpool. 100 pages. Price 7 s/6 d. Published in Great Britain by J. S. Cottrell & Co., 14-17 Charlotte St., London W.1.

The major portion of this book is composed of three separate papers entitled "The Caries Chaos", "Pyorrhoea Panic" and "Common-Sense Dentistry". The main theme deals with the chaotic condition in which we find ourselves with regard to the theories advanced as to the causation of dental disease. The book is well written and may be read with both profit and pleasure. Those who love satire will receive a particular thrill. To those who believe that we have really accomplished a little in controlling dental caries and perio-

dontoclasia, this story will not prove very stimulating. The solution offered for the problem is admirable. The author insists on a government inquiry into caries and pyorrhoea, and also that we ask for a national investigation and research into the aetiology, pathology and relief of these conditions, that the dentists are the ones to stimulate the necessary interest, that if dental disease could be prevented (or even cured by practicable means) the saving in national expenditure, with its resulting repercussions throughout the world of industry, would be of a nature hitherto unexampled in history.

Included in this volume is a separate and additional treatise recommending the establishment of a National Laboratory for Dental Research, and urging that in any scheme of national dental service a program of research be included, for the purpose of discovering the cause and cure of dental disease. The plan is practical and worthy of the serious consideration of every man in the profession.

NEWS FROM THE PROVINCES

QUEBEC

Dr. Raoul Lafond, of Lewiston, Maine, was given an honorary D.D.S. degree by the School of Dentistry of the University of Montreal on May 11th. Dr. Lafond received his parchment from the hands of Rev. Olivier Maurault, P.S.S., Rector. Dr. Joseph Nolin presented the congratulations of the faculty, and Dr. Louis Philippe Begin spoke on behalf of the Franco-American graduates.

NEW BRUNSWICK

At the *Saint John Health Centre* last year 25,287 patients received treatment. The nurses made 20,045 visits to the homes and 105 children attended the Gyro Fresh Air Camp.

NOVA SCOTIA

Tributes to a great dental leader by C.D.A. Officers. News of the death of Dr. G. K. Thomson will prove a great shock to his many friends. So virile, so energetic, and so interested in life, it is difficult to realize he has

passed from our midst. He was in great degree a man of friendships and his geniality of disposition endeared him to his fellows. One of the leaders in his profession, his enthusiasm, his industry, his perseverance, will be sorely missed. His attitude was that there was always a great amount of good work to be done for the profession, and he shouldered his share of responsibilities with ardency. Eager to keep informed of professional developments he travelled much and was well-known throughout Canada and the United States. Although said of another, "he died learning" is very appropriate when spoken of Dr. Thomson. The profession of dentistry will miss him grievously.—By *Dr. A. W. Faulkner*, of Halifax, associate editor of the *Journal* and past-president of the C.D.A.

Dean Thomson will be very much missed in dental circles not only in Nova Scotia but in all parts of Canada. He took an intense interest in everything he considered would advance the standards of dentistry. He was

News from the Provinces

a familiar figure at Canadian dental conventions in which he always took a very prominent part, serving for many years as a member of the executive of both the provincial and national bodies.—By Dr. J. Stanley Bagnall, of Halifax, secretary of the C.D.A.

•

Dr. W. W. Woodbury, distinguished orthodontist of Halifax, has been appointed to fill the important post of Dean of the Dental School of Dalhousie University, in succession to the late Dr. George Kerr Thomson. Dr. Woodbury is a graduate of the Halifax Academy and Dalhousie University, where he obtained the degree of B.Sc. Later he pursued his course in dentistry at the Philadelphia Dental College. He has served faithfully on the faculty of the Dental School of Dalhousie since its inception, and since 1910 has been professor of orthodontia. Recognized as one of the leaders in his profession, he will bring to this important office the experience of many years, plus a delightful personality that will appeal at once to student and faculty alike.

The Canadian Dental Association congratulates Dr. Woodbury upon his appointment to this important position and wishes him many and successful years of service in this new field of endeavour.

PRINCE EDWARD ISLAND

Dr. Harry S. Thomson, secretary of the Canadian Dental Hygiene Council, has spent a few weeks recently in this province, visiting the schools and speaking to the pupils on dental hygiene, a further phase of the health campaign recently carried on in this province.

BRITISH COLUMBIA

Doctor F. J. Hoelscher, of Seattle, gave an address and clinic in Victoria on June 1st, under the auspices of the Victoria Dental Society. The speaker gave a clinic on impression taking for upper and lower dentures, also the selection of artificial teeth from the standpoint of type, facial expression, colour, etc. He was assisted in his clinic by his technician, Ernest Holland, also of Seattle.

The demonstration was followed by a dinner in the hotel, at which Doctor Hoelscher

gave a paper entitled, "The Modern Trend of Dentistry Today".

ALBERTA

At the *Convention of the Western Canada Dental Society*, held in Calgary, June 3-5, the following officers were elected:

President—C. W. Parker, Regina, Sask.

1st Vice-President—H. J. Merkeley, Winnipeg, Man.

2nd Vice-President—J. M. Dixon, Calgary, Alta.

Secretary—W. H. Ibberson, Saskatoon, Sask.

Treasurer—A. Singer, Saskatoon, Sask.

It was decided to hold the next convention in Saskatoon in 1937.

SASKATCHEWAN

Announcement is made of the appointment of Dr. G. L. Cameron, chairman of the Swift Current collegiate and public school boards, to membership in the Saskatchewan educational council, a body of five men who act as advisers to the provincial department of education, and who are consulted by the department on matters of importance in connection with education in Saskatchewan.

The choice was made in recognition of his great interest in educational matters over a long period and of his outstanding service as member of Swift Current school boards in various capacities for the last ten years.

The Canadian Dental Association congratulates most heartily its able president upon his achievements in the field of education in the province of Saskatchewan.

MANITOBA

The *annual meeting of the Manitoba Dental Association* was held in Winnipeg on June 17. Doctor W. G. Harper, of Chicago, gave a lecture and clinic on the use and proper manipulation of amalgam. Following the business meeting there was a golf tournament and dinner at the St. Charles Country Club.

ONTARIO

The *executive of the Ontario Dental Association* for 1935 will be as follows:

President—E. W. Paul.

Past-President—W. H. Woodrow.

The Journal of The Canadian Dental Association

Vice-President—G. H. Campbell.

Archivist—W. G. Trelford.

DIRECTORS

J. C. A. Crawford, Haileybury.

J. N. Stewart, Hamilton.

R. S. Woollatt, Toronto.

Ira W. Hamilton, Ottawa.

R. C. McCutcheon, Highgate.

S. Lee Honey, Timmins.

Robert Dunlop, Toronto.

•

The executive of the Public Dental Health Committee of Ontario for 1935 is as follows:

Chairman—R. D. Thornton.

Secretary—E. T. Guest.

M. A. Ross Thomas.

E. A. Grant.

Frank Martin.

J. S. Lapp.

•

At the annual meeting of the Royal College of Dental Surgeons, the following officers were elected:

President—G. H. Holmes, Owen Sound.

Vice-President—E. C. Veitch, Toronto.

Registrar—W. H. Woodrow, Brockville.

Secretary—W. E. Willmott, Toronto.

RESOLUTION OF ONTARIO DENTAL ASSOCIATION

Whereas, the Canadian Dental Association commenced publication under its auspices a journal known as the Journal of the Canadian Dental Association,

and

Whereas, Canadian dentistry has never, until the present time, owned and controlled a professional journal to speak for Canadian dentistry,

and

Whereas, the influence of such a journal, in building up a national sentiment in Canadian dentistry and uniting the different dental organizations of Canada, and improving the organization known as the Canadian Dental Association, is of paramount importance,

and

Whereas, the publication of such a journal will add greatly to the usefulness of the national body,

Therefore be it resolved that the Ontario Dental Association goes on record this 21st day of May, 1935, as approving and endorsing the project of a national journal sponsored and controlled by the Canadian Dental Association, and congratulates the editors, business manager and their associates on the splendid issues recently published and wishes them success in this history-making achievement.

GENERAL NEWS

INTERNATIONAL DENTAL FEDERATION (F.D.I.)

Ninth International Congress at Vienna in 1936

PROGRAM

MONDAY morning—

1. Anatomy, Physiology, Histology, Pathology, Bacteriology, Pharmacology.

2. Full Prosthesis.

3. History of Dentistry, Documentation, the Professional Press.

Afternoon DEMONSTRATIONS

TUESDAY morning—

4. Aetiology and treatment of Dental Caries, Filling.

5. Crowns, Fixed Prosthesis, Ceramics.

6. Teaching.

Afternoon DEMONSTRATIONS

WEDNESDAY morning—

7. Anaesthesia, Narcosis, Radiology.

8. Paradental affections.

9. Public dental services, Social legislation.

Afternoon FREE (The demonstrations in these fields will be given on Friday afternoon.)

THURSDAY morning—

10. Root Canal Treatment. Focal Infection.

11. Partial removable prosthesis.

12. Metallurgy.

Afternoon DEMONSTRATIONS

SATURDAY Closing meeting of the F.D.I.

In the 1936 Congress the work will be classified and divided between several neigh-

bouring buildings, communications being read in one building, demonstrations given in another, and exhibits in another.

All the communications will be translated into the different languages by interpreters and transmitted by microphones. Every convenience will be provided.

■
The Oregon State Dental Society enacted a law establishing as unprofessional conduct the advertising of prices, costs, fees, guarantees of services, free examinations, claims for superiority of work, using cuts of crowns, bridges, plates, etc., and granting to the State Board of Dental Examiners authority to revoke a dentist's license for such unprofessional conduct. Two advertising dentists secured restraining orders in the local courts. These cases finally came before the Oregon State Supreme Court, which unanimously upheld the constitutionality of the law.

One of these advertisers appealed to the United States Supreme Court.

On April 1st the United States Supreme Court handed down a decision upholding the Oregon law, the chief justice stating that the public should be protected against practices which "tend to demoralize the profession".

This problem cost the dentists of Oregon over \$4,000.00 before it reached the U. S. Supreme Court stage, at which juncture the American Dental Association came to the financial assistance of the Oregon dentists.—*Journal of the Ohio State Dental Society.*

•
Excerpts from address given by Dr. Rexford Guy Tugwell, Under-Secretary of Agriculture in the United States, before the Midwinter Meeting of the Chicago Dental Society, 1935.

"Every organized group must be ready to face the future and act courageously."

"Simply to hope that things will adjust themselves without conscious effort on the

part of society is to take a stand with the group which expects the Twentieth Century to blow over. To take this position is to risk frustration and defeat, for the impulse to find security is as old as society itself and in the long run it will not be denied."

"I cannot read the future, but I can only repeat my conviction that you, like every other group whose interests are part of the whole picture, will have to make your choice between the needs of the future—whatever they may be—and the futile alternative of trying to protect existing special interests at any cost to society."

"I am confident that in the future we shall establish the principle of paying for health services in advance rather than in arrears."

"We must find access to your knowledge and skill for every person in the land, just as we have undertaken to open educational opportunities to every child, whether he be rich or poor or wherever he may live. I am convinced that this can be done without impairing professional zeal or preventing the development of individual incentive."—*Oral Hygiene, April, 1935.*

•
New Dental Law in Minnesota, U. S. A. Minnesota's new dental act was passed by the State legislature with only six opposing votes. It goes into effect July 1, 1935. According to this Act no advertising is permitted except a formal notice showing name, address, hours, telephone number, etc. All dentists must practise under their own names. Written authorization, signed by a licensed dentist, must accompany the order for work before a dental laboratory may perform any dental laboratory work. Dentists are exempt from jury duty while engaged in the practice of their profession. To practise without a license is made a gross misdemeanour, punishable by a fine not to exceed \$1,000 or one year in the county jail, or both fine and imprisonment.

EMPIRE NEWS

INDIA

The Fourteenth Annual Report of the Calcutta Dental College and Hospital was submitted March 30th, 1935.

This College was founded in 1920 and is at present the only dental training institution in the whole of India. It is fully equipped for teaching dentistry according to modern

methods. The faculty consists of European and American qualified dentists and physicians.

Since its establishment the college has opened up a new career for 149 young men and women. During the year under review there were 75 students enrolled, 25 of whom graduated.

The fact that there is no dental registration law in any province of India restricting the practice of dentistry only to qualified men, has stood in the way of progress.

To date a three-year course has been provided after matriculation from an Indian university. The course for medical practitioners is one of twelve months. It has been recom-

mended recently that the regular course be lengthened to four years.

With the exception of three full-term and two half-term members of the staff, the teachers are all honorary workers.

The outstanding event of year, as far as dental education in Bengal is concerned, was the appointment, by the government of Bengal, of a Dental Education and Registration Enquiry Committee in November, 1934, to go into the question of dental education and registration in the province. The committee has sent a unanimous report to the Government of Bengal, recommending the establishment of a State Dental Board.

IN MEMORIAM

IN MEMORIAM RESOLUTION OF MONTREAL DENTAL CLUB

Whereas, it has pleased Almighty God in His Infinite Wisdom to remove from amongst us on the ninth day of May, 1935, our beloved friend and colleague, *Dr. William Watson*, and whereas, Dr. Watson has practised his chosen profession for thirty-four years during which time he has always devoted himself sincerely and conscientiously to the best interests of the profession and has been held in the highest esteem by the community at large; and for many years of that time has been an active and loyal member of this club, having enjoyed at one time its highest office, therefore be it—

Resolved, that we, the members of The Montreal Dental Club, do hereby express our feelings of sorrow in the loss of so valued a member and our sincere sympathies to his widow and members of his family, and be it further—

Resolved that the secretary be instructed to spread this resolution upon the minutes of the club, to send a copy to Mrs. Watson, and a copy to the Journal of The Canadian Dental Association.

EDWIN A. LINFOOT—at Toronto, May 6th, aged 34. He graduated from University of

Toronto in 1925, subsequently practising dentistry in Toronto and Harrison. He was a member of the Presbyterian Church, and was active in all kinds of sport.

•

T. NORMAN GUY—of Vancouver, B.C., on May 19th, aged 46. He resided in Vancouver for 22 years and was a prominent member of the B. C. Dental Association.

•

R. L. DUDLEY—of North Bay, Ontario, on May 12th. He took a prominent part in education and for a number of years was chairman of the board. He was active in Rotary, golf, curling, and fishing circles. Mr. Dudley was also a Mason and an Anglican.

•

E. PALMER SMITH—of London, Ontario, died on May 8th, following a brief illness. He graduated from the University of Toronto in 1900, and since then has practised in London. He was a Mason, a member of the Highland Golf Club, and one of London's best-known horsemen. Until recently he was a member of the board of St. Andrew's Church.

SECTION FRANÇAISE

Rédacteur.

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Rédacteur-Adjoint.

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DR. HENRI VILLAIN,

Président de l'Association Générale Syndicale
des Dentistes de France.
45 rue de la Tour, PARIS.

DR. ALBERT JOACHIM,

Président du Quatrième Congrès Dentaire
National Belge.
3 rue de Hornes, BRUXELLES.

DR. FRANÇOIS ACKERMANN,

Médecin-dentiste.
33 rue du Rhone, GENEVE.

LA COUCHE GRANULEUSE DE TOMES

Sa signification

Par **ALCIDE THIBAUDEAU, D.D.S.,** Montréal.

L'EXISTENCE de la couche granuleuse de Tomes, est un fait qui dépasse de beaucoup les limites d'une simple fantaisie d'anatomiste. Ignorer sa présence conduit à des hésitations ou à des négligences invariablement néfastes. Une connaissance plus approfondie et surtout plus pratique de sa nature, sauverait des milliers de dents.

La présence de cette couche granuleuse de Tomes est depuis longtemps prouvée. Il serait donc superflu de s'y attarder. Mais il n'en n'est pas ainsi de sa localisation.

Tomes et ses contemporains ont cru qu'elle se trouvait chez les humains, presque exclusivement sous le ciment. Pourtant il n'en est pas ainsi. On la localise aussi bien à une faible distance de l'émail, dans tout le pourtour de la couronne. Evidemment, elle ne présente pas les mêmes caractéristiques dans toutes les dents examinées, car, dans chacune

d'elles, la calcification atteint des degrés différents de perfection.

Ainsi, aux frontières énamo-dentaires ou cémento-dentaires, il existe une zone de dentine toute parsemée de lacunes ou

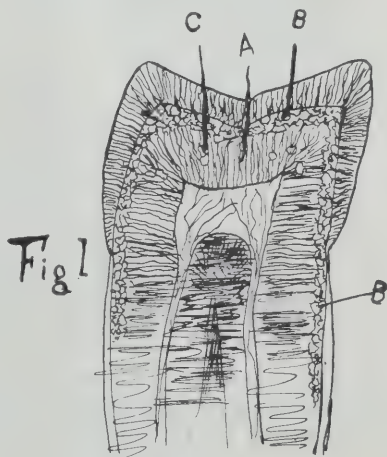


FIG. 1

A. Canalicules. B. couche granuleuse (exagérée pour le besoin de la démonstration). C. espace interglobulaire de Czermak (isolé).

d'espaces non calcifiés que Czermak a nommés espaces interglobulaires. (Fig. 1.) Encore faisait-il erreur en les localisant exclusivement au coeur de la dentine et en les décrivant comme remplis d'air. Dans une préparation très fraîche et faite rapidement, on constate que tous ces espaces du centre et de la périphérie de la dentine sont remplis d'un plasma léger qui reste en communication avec la pulpe par la voie des canalicules, tant qu'une calcification plus intense ne vient pas lui en fermer la route.

Au point de vue pratique, que peuvent bien nous apporter toutes ces subtilités histologiques?

Voici: cette couche granuleuse de Tomes devient une véritable menace pour les dents dont la couche d'émail comporte quelque imperfection. Si au fond d'un sillon il existe une fissure, si imperceptible soit-elle, invariablement il y aura là un commencement de carie atteignant la dentine. (Fig. 2.) Celle-ci une fois entamée, tout le processus de la carie tombe dans la couche granuleuse. On voit, tout de suite, les dégâts possibles à la suite de cette première invasion. D'abord le travail de décalcification sera singulièrement facilité par la faiblesse calcique de cette couche. Les progrès du mal, dans ce cas, iront donc dans la direction de la moindre résistance. Comme cette couche granuleuse est parallèle à la couche d'émail, c'est donc en superficie, sous l'émail, et non en profondeur vers la pulpe que se fera le plus grand travail d'extension de la carie, et cela toujours sans le moindre signe extérieur, sauf la lésion initiale. Il ne faudra tout de même pas croire inexpugnable la couche infiniment plus dense à proximité de la pulpe. Les microbes pénétrés dans la dentine par la fissure, ont trouvé dans les espaces

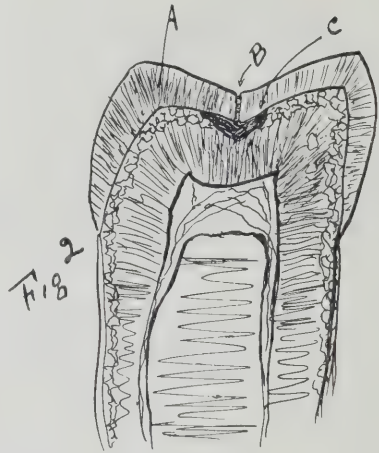


FIG. 2

A. Email normal. B. imperfection. C. Carie
comme tous les praticiens en ont vue.

interglobulaires une substance protoplasmique particulièrement favorable à leur développement. Et ce qui est encore plus grave, c'est que ces petites forteresses se relient entre elles par des couloirs et possèdent des tranchées toutes faites en relation directe avec la pulpe: les canalicules. Nous avons là l'explication de ces petits points noirs; caries au diamètre extrêmement ténu, mais dont on ne croirait jamais pouvoir atteindre le fond. Tomes lui-même, et ses disciples après lui, ont trouvé des micro-organismes dans les canalicules qui traversent les espaces interglobulaires de Czermak au coeur de la dentine. Quelquefois même la multiplication des bactéries à cet endroit avait été suffisante pour faire éclater la paroi des canalicules. Or il arrive que tout ce processus de destruction peut atteindre la pulpe sans la moindre odontalgie. En effet, l'émail par sa propre résistance n'a pas encore cédé sous les forces de la mastication. Et comme à l'intérieur la carie procède par dévitalisation lente des substances vivantes de la dentine et que les

déchets restent sur place, il en résulte que la couche d'émail protège la pulpe contre les pressions, et les déchets eux-mêmes contre les changements thermiques ou contre les réactions chimiques violentes. D'où la fausse sécurité de la part du patient, et les grands désappointements dans les interventions tardives.

Comme conclusion de tout cet exposé, il ne serait donc pas exagéré de dire d'abord que les Drs. Hyatt, Bodecker et autres encore ont fort raison de recommander la destruction impitoyable de toutes les fissures, particulièrement si on les rencontre sur les dents des enfants. Et malgré toutes ces exhortations, il semble même que nous hésitions beaucoup trop. "La fissure est si petite que le meilleur explorateur y entre à peine." Qui de nous, après une hésitation semblable n'a pas été déconcerté de l'étendue de la carie à l'ouverture d'une de ces cavités si bien dissimulées? J'ai du dévitaliser une dent de 6 ans, déclarée saine peu de temps auparavant par un confrère, et j'ai failli moi-même commettre la même erreur, croyant exagéré d'ouvrir une fissure si peu prononcée. Il faut donc moins craindre une intervention inopportune qu'une trop tardive.

En second lieu il faudrait conclure aussi que dans la préparation de la cavité, l'extension pour la prévention demeure d'une importance primordiale. Comme la couche de Tomes s'étend sous l'émail, la carie envahit cette zone de moindre résistance. Souvent, faute d'avoir assez largement ouvert, il nous arrive de laisser de la carie qui a suivi cette couche de Tomes et d'obturer ainsi une cavité mal préparée. (Fig. 3.)

Il faut donc de toute nécessité étendre les contours de la cavité jusqu'au delà de la limite envahie par la carie, sans quoi

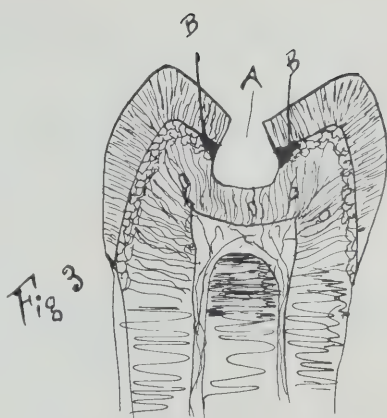


FIG. 3

A. Cavité comme on en voit trop souvent. B. Carie envahissant la couche granuleuse et qu'on a laissée faute de vision.

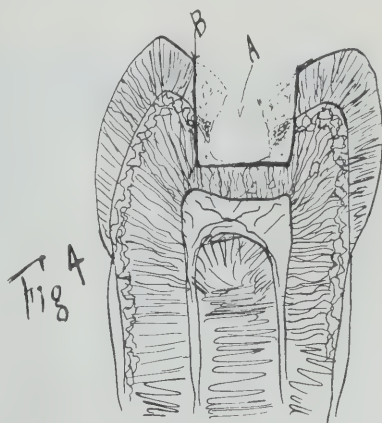


FIG. 4

A. Mauvaise préparation de la fig. 3. B. Telle qu'elle devrait être pour atteindre toute la carie.

c'est la récurrence avec tous ses inconvénients et pour le confort du patient, et pour la réputation du dentiste. (Fig. 4.)

Ouvrons donc sans hésiter toutes les fissures où s'accroche la pointe des plus fins explorateurs et, surtout, ouvrons-les assez largement pour avoir la certitude de n'y point laisser de carie.

L'observance de ces deux conseils

donnés par les apôtres de la prévention, évitera aux patients des dévitalisations regrettables, des restaurations dispendieuses et souvent peu esthétiques, pendant que de son côté le dentiste méritera la confiance d'une clientèle assidue et reconnaissante.

DR. ALCIDE THIBAUDEAU,
516, rue Sherbrooke Est, Montréal.

Mummary, J. H.

Tomes, Sir J.

Tims & Henry.

Hyatt, T. P.

Bodecker, Chs. F.

UN NOUVEAU PROCÉDE HEMOSTATIQUE DANS LES INTERVENTIONS DENTAIRES

Emploi de sérum de cheval
en injections intratissulaires à doses très faibles.

Par MM. HAMON (d'Orléans) et PINEAU (de Vernon).
Le Siècle Dentaire 1er mars 1935.

CETTE nouvelle technique concernant l'utilisation de sérum de cheval comme hémostatique a été rapportée par les auteurs à l'Académie de médecine, ainsi que les observations ci-dessous rapportées concernant toutes des hémorragies post-opératoires survenues à la suite d'avulsions dentaires.

Dans tous les cas, au lieu d'administrer le sérum de cheval en quantité relativement importante (au moins 10 centimètres cubes) par voie buccale sous cutanée ou rectale, d'autres l'ont utilisé à doses très faibles (1 c.c. $\frac{1}{2}$ en moyenne), en injections locales intra-tissulaires. Avec l'emploi de doses si faibles il n'y a jamais eu le moindre incident anaphylactique, ni aucune complication infectieuse ou douloureuse.

Voici quelle est la technique en présence d'une hémorragie sérieuse à la suite d'extraction dentaire: on aspire environ 1 c.c. $\frac{1}{2}$ de sérum de cheval dans une seringue munie d'une aiguille fine à biseau court (pratiquement la seringue

d'emploi usuel en stomatologie pour l'anesthésie locale), puis on introduit l'aiguille dans l'épaisseur de la gencive qui encercle l'alvéole, siège de l'hémorragie, en orientant l'axe de la seringue suivant un plan presque parallèle à celui de la muqueuse, de manière à éviter d'embrocher celle-ci. On injecte la moitié de la dose de sérum du côté vestibulaire, le surplus du côté lingual. Un gros tampon d'ouate est alors installé sur l'ensemble de la gencive à la place de la dent extraite et on fait exercer une compression par la mâchoire antagoniste pendant dix minutes environ. A ce moment le tampon est retiré et on constate toujours l'arrêt complet de l'hémorragie quelles qu'en puissent être la cause et l'intensité.

En résumé, sans vouloir diminuer la valeur des traitements usités en cas d'hémorragie dentaire à la suite d'extraction, et notamment l'emploi de muscle de poulet qui semble donner de remarquables résultats, nous pensons que notre

technique est susceptible, par sa simplicité et son innocuité, de rendre des services en cas d'hémorragie importante ayant résisté à la compression externe, et peut éviter le tamponnement intra-alvéolaire, toujours douloureux et pouvant entraîner des complications plus ou moins graves, surtout dans les cas où l'articulation alvéolo-dentaire est infectée.

De plus, on est en droit de se demander si l'injection locale intra-cellulaire d'une faible quantité de sérum de cheval n'aurait pas les mêmes heureux résultats dans le traitement des hémorragies d'un autre ordre que celles que nous avons rapportées (ablation d'amyg-

dales, de végétations, de polypes nasaux, épistaxis, voire hémorragies utérines), soit dans tous les cas où cette injection intratissulaire peut être réalisée correctement, le siège de l'hémorragie étant suffisamment accessible à cet effet.

A noter enfin que cette technique a donné des résultats constants, soit chez des sujets pour lesquels l'hémorragie traitée semblait un accident isolé dû à des circonstances particulières (fracture du rebord alvéolaire), soit chez des sujets pouvant, d'après les idées modernes, être rattachés à la classe des hémophiliques ou à celle des hémogéniques.



LE DOCTEUR RAOUL LAFOND



DOCTEUR S. GAUDREAU
Professeur à l'Université Laval, Québec.

Le Docteur Raoul Lafond de Lewiston, Maine, et le Docteur S. Gaudreau, de Québec, viennent d'être honorés par l'Université de Montréal et ont reçu le titre de docteur en Chirurgie dentaire (pro honoris causa). Nos félicitations.

L'EXERCICE DE L'ART DENTAIRE

La cour d'appel de Nancy rend un arrêt de la plus haute importance, qui crée une jurisprudence.

Le *Siècle Médical* 1er février 1935.

LA COUR d'appel de Nancy vient de rendre un arrêt de la plus haute importance, qui crée une jurisprudence dont devront s'inspirer, dorénavant, les praticiens de l'art dentaire ayant des aides à leur disposition.

En juillet dernier, des poursuites correctionnelles furent exercées, à la requête du syndicat des chirurgiens-dentistes de Lorraine, contre Paul Lefebvre, chirurgien-dentiste à Nancy et contre son mécanicien, Camille Schehr.

On reprochait au mécanicien d'avoir, sous la surveillance et les directives du dentiste, pris des empreintes et essayé des appareils de prothèse à des clients.

Le tribunal acquitta le mécanicien et le dentiste poursuivis, en disant notamment, dans son jugement, que le mécanicien n'avait ni procédé à l'examen de la bouche des patients, ni à des extractions, ni à des limages de dents.

Le jugement ajoutait que la loi du 30 novembre 1932 était destinée à protéger la santé publique et que, dans ces conditions, une extraction ou une opération chirurgicale pouvant provoquer des hémorragies était, avec raison, réprimé par elle. Le tribunal estima qu'il ne saurait en être de même d'une prise d'empreinte, faite par un mécanicien non diplômé; car il ne pouvait en résulter aucun inconvénient pour la santé des clients.

Débouté de son intervention, comme partie civile, le syndicat des chirurgiens-dentistes de Lorraine fit appel, ainsi que le ministère public.

La cour de Nancy, après avoir entendu les plaidoiries de Mes. Robert Gasse, du barreau de Nancy, et Suzanne Grimberg, du barreau de Paris, pour le syndicat et de Me. Doyen, de Nancy, pour les prévenus, avait mis l'affaire en délibéré.

L'arrêt qu'elle vient de rendre dit notamment:

ATTENDU que l'article 2 de la loi du 30 novembre 1892 protège la pratique de l'art dentaire en général, ne se borne pas à réprimer les actes de chirurgie dentaire illégaux;

ATTENDU, d'autre part, que l'art dentaire, à n'en pas douter, comprend tous les travaux de prothèse, d'où il suit que les dits travaux ne peuvent être exécutés que par les seules personnes munies du diplôme de chirurgien-dentiste ou de médecin;

ATTENDU que cela s'explique d'autant mieux que la prise d'empreintes est une opération délicate et que l'essayage d'un dentier est susceptible d'avoir, en cas de maladresse, des conséquences importantes et parfois graves sur l'état de santé des clients; que si la pose d'un appareil exige des connaissances spéciales en anatomie de physiologie, l'essayage et la pose des empreintes qui en sont le prélude doivent, sans nul doute, nécessiter également semblables connaissances;

ATTENDU qu'on en arrive à cette conclusion que tout mécanicien-dentiste non muni de diplôme, ne peut, en aucun cas, toucher à la bouche d'un client du dentiste ou du médecin au service duquel il se trouve; que ce droit appartient, seul,

à ce dernier; que le travail du mécanicien se borne uniquement à la fabrication des appareils de prothèse conçus par le dentiste ou le médecin;

ATTENDU que cette interdiction applicable au mécanicien ne comporte pas d'exception et s'impose même dans le cas où ces travaux de pose d'empreintes et d'essayage de dentiers seraient effectués par lui, en présence de son patron diplômé; qu'il n'existe pas deux catégories d'opérations d'art dentaire, les unes subordonnées à un contrôle et à une surveillance, les autres non soumises à ces conditions; que la formule employée par le législateur "pratique de l'art dentaire" est générale et ne comporte pas d'exception formulée par l'article 16 de la loi du 30 novembre 1892, en faveur des élèves en médecine, à l'exclusion, par conséquent, des étudiants en art dentaire, et à plus forte raison des mécaniciens non diplômés, sans aucune formation ou compétence scientifique;

ATTENDU, sans doute, que les prévenus invoquent en leur faveur un arrêt de la Cour de cassation du 15 novembre 1906 (3. 1908-1-377) aux termes duquel est considéré comme délictueux "le fait par un mécanicien-dentiste de prendre une empreinte et d'opérer la pose d'un appareil, en dehors de la surveillance

d'un dentiste diplômé", d'où ils tirent cette conclusion que ces mêmes opérations faites en la présence et sous le contrôle du dentiste sont licites;

Mais ATTENDU que, dans cette décision, la Cour suprême n'a pas eu à répondre à la question telle qu'elle est aujourd'hui posée, et n'a statué que sur le point de savoir s'il était, ou non, permis à un mécanicien dentiste de pratiquer sur une personne des opérations de prothèse dentaire, sans l'assistance du dentiste son patron, ce à quoi il est répondu par la négative;

ATTENDU que la culpabilité des faits reprochés aux deux prévenus est donc bien établie et doit être retenue contre eux;

Sur les intérêts civils:

"ATTENDU que le syndicat des chirurgiens-dentistes de Lorraine est bien fondé à se porter partie civile et à obtenir des dommages-intérêts, pour le préjudice, tant moral que matériel, qu'il a subi".

En conséquence, la cour a condamné Paul Lefebvre et Camille Schehr à 50 francs d'amende chacun. Elle a condamné également le premier à verser 1,000 francs et le second 2,000 francs de dommages-intérêts au syndicat des chirurgiens-dentistes de Lorraine.

LA JOURNEE DES ANCIENS

de la Faculté de Chirurgie dentaire, Université de Montréal.

ORGANISEE lors du congrès des Dentistes de L.F.A.N., l'Association des Anciens de la Faculté Dentaire de l'Université de Montréal, a tenu le 11 mai dernier sa première réunion annuelle. Ceux qui y ont assisté ne regretteront

pas leur déplacement. Cette journée a vraiment pris les proportions d'un congrès.

Le matin, après la séance d'ouverture présidée par M. le Recteur, eut lieu la première grande assemblée de l'Associ-

ation pour en parachever l'organisation. Les élections portèrent aux honneurs les confrères suivants:

Président—Dr. E. Charron.

Vice-Présidents—Dr. M. Durand,

Dr. A. Dion,

Dr. A. Massicotte,

Dr. G. Leblanc.

Secrétaire—Dr. P. Geoffrion.

Ass. Sec.—Dr. A. Renaud.

Trésorier—Dr. J. A. Pinault.

Outre cet exécutif, un conseil de trente directeurs fut aussi constitué.

Le reste de l'avant-midi fut réservé à la visite du "Musée" Oh! pas le musée déjà connu de notre Faculté. Non. Quelque chose de bien nouveau fait avec de très anciens objets dentaires. Une idée germée dans la tête du Dr. P. E. Poitras. Celui-ci, secondé par l'inlassable Geoffrion en fit un tel succès que la pièce, pourtant spacieuse, fut encombrée jusqu'au plafond. L'inspirateur de ce projet et son collaborateur méritent des félicitations.

Les démonstrations de table et de

cabinet qui ont eu lieu tout le long de l'après-midi, ont suscité un très vif intérêt. Ces journées se continueront chaque année, vers la même date. Il est à souhaiter que tous ceux qui n'ont pas de raisons sérieuses de s'abstenir, seront présents l'an prochain. Il y a tant à apprendre au point de vue scientifique et social.

Vers 7 heures, p.m., au Cercle Universitaire, se déroula une petite cérémonie assez importante. Conformément à une résolution du conseil de la Faculté de Chirurgie Dentaire, M. le Recteur au milieu des membres de cette faculté, tous en tenue universitaire, conféra le titre de Docteur en Chirurgie Dentaire, au Docteur Lafond de Lewiston, Maine.

Le Dr. Raoul Lafond, émigré très jeune aux Etats-Unis, y exerce la profession de chirurgien dentiste. Citoyen de haute valeur, il sut conquérir et garder l'estime non seulement de ses confrères et de ses compatriotes, mais aussi de tous ses concitoyens américains.

DR. ALCIDE THIBAUDEAU.

FEDERATION DENTAIRE INTERNATIONALE (F.D.I.) CONGRES INTERNATIONAL DE VIENNE EN 1936

LORS du VIIIème Congrès Dentaire International tenu à Paris en 1931, il a été décidé d'accepter l'invitation des confrères autrichiens de tenir le Congrès International Quinquennal de 1936 à Vienne.

Le Comité organisateur de ce congrès fut constitué au début de 1933. Au cours des nombreuses séances qui suivirent, ce comité prit toutes les décisions relatives

à l'organisation et aux manifestations scientifiques du futur congrès et à cet effet, il se tint en rapports constants avec Mr. Georges Villain, Président, et Mr. Ch. Mord, Secrétaire de la F.D.I.

Les status du Congrès proposés par le comité organisateur de Vienne, furent approuvés à la session de la F.D.I. à Côme.

Le Congrès se tiendra du 2 au 8 août 1936.—

Nous attirons l'attention des participants sur le nouvel ordre adopté, c'est-à-dire que les communications se donneront dans les matinées, tandis que les démonstrations auront lieu les après-midi.

LUNDI:

matin: 1. Anatomie, Physiologie, Histologie, Pathologie, Bactériologie, Pharmacologie. 2. Prothèse complète. 3. Histoire de l'Art Dentaire, Documentation, Presse professionnelle.

après-midi: démonstrations.

MARDI:

matin: 4. Etiologie et traitement de la carie. Obturations. 5. Couronnes, Pro-

thèse fixe, Céramique. 6. Enseignement. après-midi: démonstrations.

MERCREDI:

matin: 7. Anesthésie, Narcose, Radiologie. 8. Affections paradentaires. 9. Services dentaires publics, législation sociale.

après-midi: Libre (les démonstrations dans ces domaines auront lieu vendredi après-midi).

JEUDI:

matin: 10. Traitement des canaux radiculaires, infection focale. 11. Prothèse partielle amovible. 12. Métallurgie. après-midi: démonstrations.

SAMEDI: séances de clôture de la F.D.I.

DISPOSITION DES LOCAUX DANS LESQUELS SE TIENDRA LE CONGRÈS DE VIENNE

A LA suite des expériences acquises lors des derniers congrès internationaux, le comité organisateur a décidé que le congrès de 1936 scindera ses travaux et les classera dans des bâtiments divers spécialement appropriés et situés les uns à côté des autres.

Dans l'une de ces constructions "Musikvereinhaus" se donneront les communications. L'autre "Kunstlerhaus" contiendra l'exposition.

Le troisième édifice "Handelsakademie" a été prévu pour les démonstrations. Dans le Musikvereinhaus se feront l'après-midi, dans des salles différentes, les démonstrations se rapportant aux communications faites dans l'avant-midi.

Toutes les communications seront traduites dans les différentes langues par

des interprètes et transmises au moyen de microphones.

Dans tous les locaux, les haut-parleurs annonceront aux participants en temps opportun, les titres des conférences afin de leur permettre de choisir celles qui leur conviendront; de cette façon les membres pourront visiter l'exposition sans craindre de manquer une communication qui pourrait les intéresser.

Il a aussi été prévu des salles où se feront les communications non suivies de démonstrations.

Un restaurant muni de tout le confort moderne, des salles pour se reposer et se rafraîchir et où les congressistes pourront passer agréablement leurs loisirs, seront installés sur le lieu même du congrès et là comme ailleurs, les haut-parleurs annonceront les conférences.

The Journal of The Canadian Dental Association

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It takes great love to stir a human heart
To live beyond the others and apart.
A love that is not shallow, is not small,
Is not for one, or two, but for them all.
Love that can wound love, for its higher need;
Love that can leave love, though the heart may bleed;
Love that can lose love, family and friend;
Yet steadfastly live, loving to the end.
A love that asks no answer, that can live,
Moved by one burning, deathless force—to give.
Love, strength and courage. Courage, strength and love,
The heroes of all time are built thereof.

From: IN THIS OUR WORLD

By: Charlotte Perkins Stetson.



SYDNEY W. BRADLEY, M.D.S., D.D.S.,
Ottawa, Canada.

President, Eastern Ontario Dental Association.
Past-president, Canadian Dental Association; Ottawa Dental
Society; Alumni Society, Dewey School of Orthodontia.
Dr. Bradley will preside at the convention of the E.O.D.A.,
being held in Ottawa, September 9th to 10th.

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THE ROLE OF BARBITURATES IN DENTISTRY

By GEORGE A. MORGAN, D.D.S., Toronto, Ontario*

A GREAT number of barbituric acids have been synthesized and present an interesting series of substances. Numerous derivatives have come into use as hypnotics, and more recently for the production of analgesia and in some instances, anaesthesia. This is because it has been found possible to prepare alkaline salts of a degree of purity suitable for intravenous use. These substances are derivatives of a parent substance, barbituric acid, formed by the condensation of malonic acid and urea. Their activity varies with the type of substituent.

In order to clarify the relationship between the descriptive chemical term and the synonymous trade names, the following list of the more commonly used barbiturates is given:

Sodium amytal (iso-amylethyl barbituric acid).

Ipral (isopropylethyl barbituric acid).

Luminal (phenylethyl barbituric acid).

Veronal or barbital or malonal (diethyl barbituric acid).

Allonal or numal (allylisopropyl barbituric acid).

Somnifene, veronal and allonal (diethyl barbituric acid and allylisopropyl barbituric acid).

Nembutal (pento-barbital sodium).

Barbituric acid may be prepared by the condensation, under proper conditions, of malonic acid and urea, and hence it is capable of forming derivatives in a manner similar to malonic acid and urea, employing phosphorus-oxy-chloride as a condensing agent. This procedure is applicable to malonic acid itself as well as to its alkalated substitution products. As an acid, barbituric acid and its derivatives are capable of forming salts by the substitution of the acidic hydrogen atoms with inorganic alkalies or organic bases, resulting in substances which are crystalline and soluble in water. These derivatives have come into vogue recently for the production of narcosis by the intravenous route.

Barbituric acids, like other acids are bitter. Page and Caryllos¹², in 1926, presented details for the preparation of the sodium salt of iso-amylethyl barbituric acid (sodium amytal), the aqueous solution of which appeared to be stable for several months and could be given either orally or intravenously. Also barbituric acids are soluble in ethylene glycol and since this substance is non-toxic, the barbituric acids may be given intravenously, dissolved in this substance. However, the sodium salt gave better results. Sodium iso-amylethyl barbituric acid

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(sodium amytal) given intravenously to dogs in a dosage of 0.045 to 0.060 gm. for each kilogram of body weight was found to be useful as an anaesthetic for animal experimentation. The use of small doses over suitable intervals of time is an effective way of producing anaesthesia. With the optimal dose, the fall in blood pressure is not great and recovery is rapid. Many soluble alkaline salts of barbituric acid and its derivatives, which are suitable for intravenous use, have now been developed commercially and have been reported on by numerous workers.

The free barbituric acids are comparatively insoluble in water and hence are administered mainly by the oral route. The tendency now, however, seems to be toward the production and utilization of soluble salts, such as those of sodium, calcium and diethyl amine. These salts are soluble in an aqueous medium and serve admirably for intravenous injection or oral administration.

Isenberger⁵ has shown that with a suitable combination and sequence of morphine, sodium iso-amylethyl barbituric acid and a general anaesthetic, such as ether or nitrous oxide and oxygen, full anaesthesia can be safely and easily established and adjusted. At the same time there seems to be retained a definitely higher degree of respiratory reserve than when either ether or nitrous oxide-oxygen alone or preceded by morphine alone, is used to a point of similar degree of anaesthesia and relaxation. Other advantages are as follows: Small doses of the morphine and sodium iso-amylethyl barbituric acid or pento-barbital sodium (nembutal) produce total unconsciousness and analgesia in a manner in every way analogous to the onset of normal

sleep. With the combination this effect can be induced much more safely and effectively than can be accomplished with the morphine alone. At the same time, the small preliminary dose of morphine nearly always greatly reduces the amount of barbituric acid required and renders its action more uniform, more prolonged and more intense. Both the morphine and the barbituric acid usually greatly reduce the amount of general anaesthetic necessary for complete anaesthesia and relaxation. Again the supplementary effect of the inhalation and of the local anaesthetic pass off quickly. The effects of morphine and sodium iso-amylethyl barbituric acid or pento-barbital sodium (nembutal) continue and, with only small additional doses of morphine, suffice to control the post-operative distress and restlessness.

BASAL NARCOSIS

"Basal narcosis", characterized by complete unconsciousness and analgesia, can be safely and effectively produced by the use of a small dose of morphine followed by the administration of a moderate dose of sodium iso-amylethyl barbituric acid or pento-barbital sodium (nembutal). The morphine fraction seems to be largely responsible for the comparatively slight reduction in minute volume of respiration and in irritability of the respiratory centre to carbon dioxide, which results from the use of this combination. However, these changes, apparently due to the morphine, develop much more rapidly when the effect of the barbituric acid is added to that of the morphine. The use of sodium iso-amylethyl barbituric acid or pento-barbital sodium (nembutal) in suitable combination and sequence with morphine, for the produc-

GEORGE A. MORGAN

tion of "basal narcosis" before general and local anaesthesia, may be accompanied by the maintenance of a higher degree of respiratory reserve than occurs when full general and local anaesthesia with relaxation are induced without preliminary medication.

EFFECT OF SECRETIONS

The question that whether or not the secretions are effected by the derivatives of barbituric acid was taken up by Tatum and Parsons¹⁶ who reported that the gastric secretions are abolished by derivatives of barbituric acid. The affinity of derivatives of barbituric acid for the nervous system has been demonstrated by many workers. Bachem² in 1911, showed that diethyl barbituric acid may be demonstrated in the brain, and that a concentration of 0.016 per cent in the brain is sufficient to produce sleep.

Many data based on the analytical procedures involving the identification of the derivatives of barbituric acid in the urine have been accumulated, regarding the mode and the rate of excretion of derivatives of barbituric acid. Quantitative methods for identification in most procedures involve the actual isolation from the urine of the crystals of the compound in question.

EFFECT ON MUSCLE

The effect of derivatives of barbituric acid on muscular activity was shown by Gruber⁴ in 1926. Dilute solutions produce loss of tonus, whereas concentrated solutions may produce complete cessation



of peristaltic movements in smooth muscles.

Cutaneous manifestations may appear after a large or small dose, and without obvious evidence of an overdose having been given. The symptoms of overdose, however, usually are associated with coma and stupor and many cases in which these phenomena have appeared have been described in medical literature. Probably the most fatal complications of an overdose of a derivative of a barbituric acid are pulmonary edema and pneumonia.

The toxic action of a derivative of barbituric acid, in a dose sufficient to interfere with the reflexes, may or may not be dangerous, depending on what reflexes are interfered with. Many men feel that excessive use of diethyl barbituric acid is the expression of, and not the fundamental cause of the patient's disorder of personality.

Methods which combine the determination of the minute volume of res-

piration and the ability of the respiratory centre to respond to carbon dioxide are of value in estimating the vital reserve of animals and patients under the influence of narcotizing agents.

Attention is again directed to the value of the elimination of spastic paralysis of the respiratory muscles in experimental poisoning from procaine by the administration of a soluble compound of barbituric acid, such as sodium iso-amylethyl barbituric acid or pento-barbital sodium (nembutal) and that in this manner properly controlled artificial respiration would be rendered possible in case of central depression of respiration as a result of an overdose of procaine.

Many authors have reported on the anaesthesia produced by the relatively large doses of derivatives of barbituric acid. This anaesthesia usually was brought about intentionally. Here, we will consider only the advantages incident to the use of large doses in producing anaesthesia, and their use as hypnotics in preparing patients for anaesthesia and operation. Almost from the time of their introduction the barbituric acids have been used in the preparation of patients for anaesthesia, so that the present-day writers who advocate the use of these agents in this connection are not the originators of the idea, but are simply reviving the old enthusiasm, and curiously enough, reference is seldom made to the men who originally advanced the idea. It would be well, at this time, to name the early authors who had probably arrived at the proper use of the barbituric acids in producing anaesthesia. Bruneri³, Pokotilo¹³ and Stossmann¹⁵ in 1907 and 1908, reported on the successful use of moderate doses of diethyl barbituric acid (veronal) in chloroform anaesthesia.

CLINICAL USE

From a review of the literature on the clinical use of the derivatives of barbituric acid the experience of the various authors is found to be fairly uniform. The speed with which a derivative of barbituric acid takes effect depends on the dosage and on the route of administration of the drug.

Regardless of the skill of the operator, the patient's impression depends on the ability of the dental surgeon to avoid creating nervous tension. Elimination of fear and apprehension by preliminary medication should therefore be a source of satisfaction to both the patient and the surgeon.

Much of the discomfort experienced during the extraction of teeth is caused by fear, which is more or less inherent. We, as dentists, are beginning to realize and recognize the value of pre-operative medication to reduce the apprehension which the patient may have regarding operative or extraction procedures. This procedure not only ensures better co-operation from the patient during operation but also adds a great deal to his comfort for several hours after either operative or surgical interference. Pento-barbital sodium (nembutal) has been found especially suitable for dental patients regardless of the type of anaesthetic used.

NEMBUTAL

If a general anaesthetic is the one of choice, nembutal in one and one-half grain dosage will reduce the tendency to nausea and vomiting. If a local anaesthetic is the one of choice, and if extractions are to be severe or rather extensive, one and one-half to three grains of nembutal will do much to alleviate ap-

prehension and fear as well as to increase the tolerance for procaine. If the case is such that hospitalization of the patient is desirable nembital, one and one-half to three grains can be used in conjunction with one-sixth grain of morphine and will tend to more readily produce "basal narcosis". As a post-operative routine procedure after difficult cases or those which involve considerable risk, it has been found that nembital, one and one-half grains just before retiring will assure the patient a good night's sleep. Because of the tendency of the patient to lapse into a stupor it is generally advisable to administer nembital in the office before surgical interference. This can be done by merely dissolving the contents of a one and one-half grain capsule in a small quantity of lukewarm water to be administered orally.

The use of nembital has been found by the author to be a considerable aid in the alleviation of post-operative pain from the so-called dry socket. The method of procedure in these cases is simply to thoroughly dry the socket, remove one end of the capsule and with the open end of the capsule toward the bottom of the socket insert the capsule into the socket. This method as a rule will bring about considerable relief in a short time and will allow the operator to more thoroughly insert a suitable dressing for the control of pain from the so-called dry socket.

In all cases where nembital is used it is advisable to have some one accompany the patient to and from the office due to the tendency of the barbiturate to produce sleep.

EVIPAL SODIUM (EVIPAN)

The proprietary name of the most re-

cent barbiturate to be placed on the market is evipal sodium (evipan). This barbiturate, first introduced in Germany by the Bayer Products Limited is intended for intravenous anaesthesia and differs from most barbiturates in that the urea ring which is the heart of all barbiturates, instead of the benzene ring has been altered. It is administered by intravenous induction, the dosage required depending upon the length of the operation. More than 50,000 administrations are reported in the foreign literature. A ten per cent solution is used for intravenous injection. Within one minute the patient falls asleep, without asphyxia, discomfort, excitement or struggle. The respirations become deeper and slower and muscular relaxation sets in early. The colour remains unaltered. The pulse stays full and regular, the blood pressure falls from 5 to 20 mm. with the onset of sleep and promptly returns to normal. Evipal should not be employed in the presence of liver trouble or in face of the mechanical interference of the air passage and should be used with caution in severe sepsis or marked depression of the respiratory centre. The author has had the opportunity of administering several anaesthetics of this type and because it is almost essential that the patient be hospitalized, it is felt that the use of this barbiturate as a general anaesthetic will not meet with universal favour with the general practitioner in dentistry.

AGRANULOCYTOSIS

The barbiturates are said to be an aetiological factor in the production of agranulocytosis and while at times there may seem to be some connection between the excessive use of a barbiturate and agranulocytosis, not all patients who have

had excessive amounts of barbiturates develop agranulocytosis. Lundy⁷ is quoted as having given to a patient, operated on for brain tumour, 10,000 grains of sodium amytal at the rate of 3 grains per hour without producing any change in the blood picture.

A word of caution against the abusive use of the derivatives of barbituric acid is, on account of their varied patient reaction, necessary. Used sparingly and in selected cases, with a knowledge of their properties, the barbiturates, especially pento-barbital sodium (nembutal) will do much to facilitate the relief of human dental suffering, thereby achieving that which must be our professional aim—the help of those who seek our aid.

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- 2 Bloor Street, East.

DENTAL CONVENTIONS

MONTREAL DENTAL CLUB FALL CLINIC—OCT. 17-19, IN MONTREAL.
AMERICAN ACADEMY OF PERIODONTOLOGY—OCT. 31-NOV. 2, IN NEW ORLEANS, LA.
AMERICAN DENTAL ASSOCIATION—NOV. 4-8, IN NEW ORLEANS, LA.
GREATER NEW YORK MEETING—DEC. 2-6, HOTEL PENNSYLVANIA.

FULL DENTURE PROSTHESIS

By LESLIE G. ROBINSON, D.D.S., Peace River, Alberta*

IT cannot be said truthfully, perhaps, that the subject of "Full Denture Prosthesis" has been overdone, but there is to be found such a bewildering array of varied, complicated techniques, and newly developed instruments and appliances, that the writer was tempted to undertake the task of sorting out some of the most useful features of them all, which might be applied to ordinary, every-day techniques. There is no argument to be made against those responsible for the elaborate techniques, and still more elaborate equipment. These men are doing a great work, and denture methods of the future are being moulded by them. However, the fact remains that thousands of average practitioners find so much that is confusing, complicated, and expensive in the suggested operations, that they are making little, if any effort to secure, and apply to their own work, what is best from them.

It is apparent that much attention is being given at present to improved methods of securing adequate registration of bearing tissues, in impression taking, particularly of the lower; to the maintenance of evenly distributed pres-

sure over all parts of the maxillary and mandibular bearing surfaces while "taking the bite"; and to accurate methods of registration of the intermandibular relations in both centric and eccentric positions. Of course, other features of full denture work are also receiving attention by the different authors, but we shall deal here with the above-mentioned important features only, in the hope that the simple methods offered may be advantageously included in the work of the average operator. Assuming that the reader possesses an articulator capable of anatomical registrations, no additional equipment is required for this work, other than the Stansbery check-bite apparatus, the cost of which is small compared to its value.

EDENTULOUS PATIENT

It is assumed that the edentulous patient is ready for impressions.

A snap compound impression is taken of the lower, allowing slight extension of compound over the proposed outline of the case. This impression is at once poured in plaster, and set aside. The usual impression of the upper is made, carefully muscle trimmed, and finished

*To those of our readers in distant lands, and to those of our own country who may not be familiar with the western section of Canada, we would point out that Edmonton is 700 miles west and 250 miles north of Winnipeg. Peace River, a town of 1,000 inhabitants, is 350 miles north-west of Edmonton and is served by two dentists, Dr. Robinson and one other. Once a year Dr. Robinson, in a professional capacity, travels several days' journey by boat to Fort Vermillion, which is another 300-mile trip north of Peace River.

It is a source of satisfaction to the officers of the Canadian Dental Association to realize that we have men, in these outlying posts, who are capable of writing such excellent papers as this one, and to visualize the high type of service our citizens in far-away Peace River and Fort Vermillion are receiving.

Dr. Robinson gave a clinic on the Stansbery technique at the Calgary Convention in June.
—The Editor.

in the chosen manner, with due care for the relief of areas over the foraminae and the larger blood-vessels. The upper impression when finished is laid aside, and we return to the lower.

The fact should here be recognized that the average operator accepts too tamely the idea that "the lower denture is never as secure as the upper, anyway". Usually a quickly trimmed compound impression, sometimes with a plaster wash, is considered all that is necessary. In this connection, it is claimed by Dr. Jaffe¹, that, following his method of taking the lower impression, its stability almost equals that of the upper. Dr. C. J. Stansbery², gives in detail a method of taking the full lower impression which is well worth study. Other authors, as well as the above-named, have shown in one way or another that they place no faith in the usual compound-plaster method, particularly for the lower. The first method shown below for the lower impression is not considered ideal, but it is a distinct improvement over the old procedure, in that the compound, moulded as the operator desired, is more likely to withstand heating and manipulation during muscle trimming, without distortion. The second method is recommended particularly for the more difficult types of ridges but may be used to advantage in all cases, if the slight additional time and material required for its use can be afforded.

FIRST METHOD

Following the first method, the approximate outline of the proposed case is marked in pencil on the snap plaster cast. An old spoon excavator or similar instrument is used to cut a shallow trough in the plaster, following the course of the pencil line. The compound originally

used is re-heated and applied, moulded, and firmly adapted to the cast in such manner as to give adequate strength to all parts of the compound tray so formed. The flanges should be moulded, or trimmed to not over $\frac{1}{8}$ th inch in thickness, for easier softening and more accurate registration when muscle trimming. The anterior part of the tray is pinched up to a height of about $\frac{3}{4}$ inch, for additional strength to the easily fractured part, and to provide a convenient grip. The compound is chilled and removed. A beaded line will be apparent where the material was pressed into the previously formed trough. The compound of the flanges is trimmed to within 2 or 3 mms. of this beaded line. The tray is now easily muscle trimmed by the sectional method, post dammed, and finished with a tryp-
lastic or plaster wash.

SECOND METHOD

For the second method, after outlining the proposed case on the plaster cast, a wax baseplate is adapted to the cast, and trimmed to the line. The surface of this wax is dusted with talcum, and a second, similar baseplate made over the first, and similarly trimmed. The wax is chilled, and the second wax baseplate removed without distortion. A suitable wax extension may be added to the anterior part of this tray to form a handle, and the whole is converted into vulcanite. The tray is made from the second baseplate, in order that there may be room for impression material in the tray. The tray is trimmed to avoid muscle impingement, much as a full denture would be trimmed in preparation for re-basing. A roll of compound the size of a pencil is traced on to the margins of the tray, and with the compound moderately softened and wet, the tray is pressed to place on

LESLIE G. ROBINSON



the plaster cast, until the compound is of about the thickness of the original wax baseplate. The tray is removed, the compound again slightly warmed, and the tray is carried to place in the mouth with sufficient pressure to iron out any slight defects that might interfere with comfortable seating. The tray is now examined to see if the compound from the buccal and labial margins has met that from the lingual margins in the deep part of the tray. If so, a space, trough, or groove should be cut in the compound, corresponding to the position of the crest of the alveolus, down to the vulcanite of the tray. This trough should extend from just short of the heel of the tray on one side around to a similar position on the opposite side. The compound is moderately warmed throughout, the impression seated in the mouth, and pressure about equal to biting pressure applied. The tray is removed, chilled, and examined. If the flowing compound has caused the trough to become closed, further compound should be cut away, as before. The tray is now ready for the usual sectional muscle trim. The latter completed, the vulcanite is perforated in several places with a large round bur, in the region of the crest, to permit the escape of the finishing material. Pressure is thus restricted to the areas where it is required, and relieved in the region of the crest. The impression is finished with truplastic, plaster, or, in some cases, with one of the newer paraffin-like finishing materials.

The principal advantages claimed for the vulcanite tray method are heat-proof

flanges, rigid enough to permit of considerable pressure over the bearing surfaces of the ridge, without distortion; lack of bulk, permitting better registration of the natural movements of the muscles in muscle trimming, and the complete relief from pressure in the region of the crest.

Of course, if desired, the closed mouth method of finishing the impressions under biting stress may be used with either method, by the use of the usual compound bite-rims.

The finished impressions are boxed, and poured with stone.

Two sets of base plates are made for each stone cast. On the first set we adapt accurate compound bite-rims to the correct contour and height, verified by examination in the mouth. Using the upper bite rim, a face-bow registration is taken, and the upper cast attached to the articulator in the usual manner. A wax bite between the compound rims, or any other

preferred method, establishes approximately correct centric, and the lower cast is temporarily attached to the articulator.

The upper compound bite-rim is removed from the articulator, and the second upper baseplate placed on the cast for the first part of the set-up. It is advisable to cut away the anterior part of these base plates, to facilitate adaptation of the anterior teeth to the ridge. The teeth having been previously selected, the upper anteriors are arranged as desired, using the lower bite-rim as a guide. When these have been examined in the mouth, and passed as satisfactory, they are firmly attached to the baseplate, and are considered permanently placed. The second lower baseplate replaces the lower compound bite-rim, and the lower anteriors are set up directly over the lower ridge. All rules regarding the set-up of teeth are subject to exceptions, but it is much more important that these lower anteriors be set directly over the ridge, than that they be in contact with the upper anteriors, if, as is often the

case, both conditions are not possible. Of course, if the lower anteriors must be set a millimetre or more to the lingual of the uppers, care must be taken later, when using the protrusive movement, that proper relation exists. If the relations of the posterior teeth are thrown out by such setting, a lateral may be substituted for the lower first bicuspid if necessary, to correct the relations.

STANSBERY APPLIANCES

The Stansbery check-bite appliances are next used, and consist of the following, (Fig. 1):—Two rigid metal plates, one plain, and one with an adjustable round headed screw in the centre, threaded so that one complete turn of the screw represents 1 mm. in height; a heater block, with handle, designed to fit between the registration plates, and guided to correct assembly therewith by means of small studs on the surface of the registration plates, with corresponding holes in the heater block; a graph plate for attachment to the lower registration plate; a style holder and style for attachment to

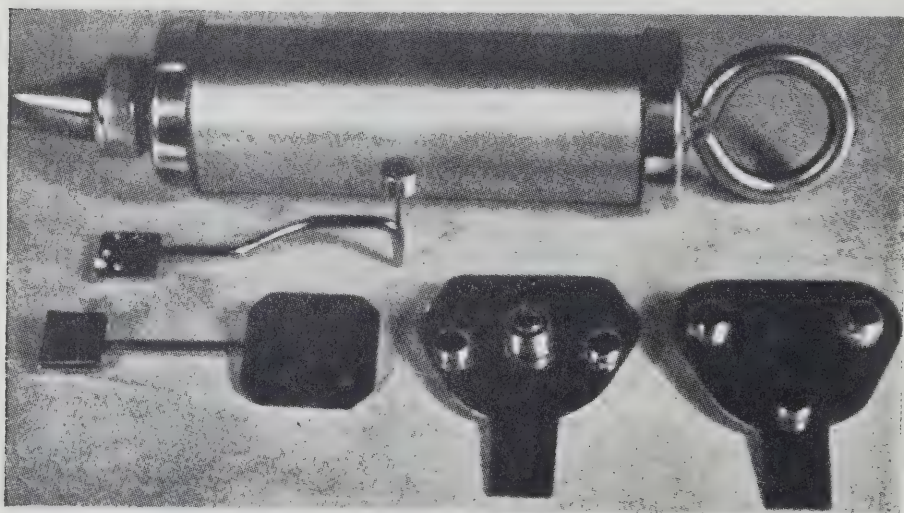


Fig. 1. Reproduced by permission of *The Dental Digest* (39:19, Jan., 1933).

the upper plate; and a syringe for the injection of plaster between the plates for check-bite records.

The compound bite-rims are now replaced on the casts. The reason for the second set of baseplates becomes apparent, for we are about to alter the compound rims, the registrations being preserved in the set-up on the other baseplates. The compound rims are each cut down about $\frac{1}{8}$ th inch, so that when the articulator is closed, there will appear a space of a little less than the width of the check-bite assembly. The heater block of the assembly is now heated until drops of water in the holes boil away, when it is again placed between the registration plates. The assembly is quickly carried to place between the compound rims, and centred. (Fig. 2) The heat, gradually penetrating through the registration plates, causes them to become attached to the compound. Care is taken to see that the articulator is brought to the previously established correct stop position, so that the proper opening is preserved. The whole is chilled, and the rims, with registration plates attached, are removed, and any excess of compound around the edges of the plates removed. With rims replaced on casts and articulator closed to the correct stop position, the stud should be so adjusted that it is in contact with the surface of the upper registration plate. (Fig. 3) The rims, with plates are now ready for insertion in the mouth, to secure accurate centric and protrusive records.

One of the chief difficulties in securing correct centric records by any other method is in knowing when that relationship has been obtained. The smoked graph, or tracer plate, is attached to the lower registration plate, and the style

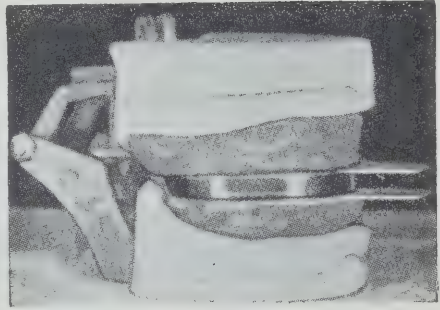


Figure 2.

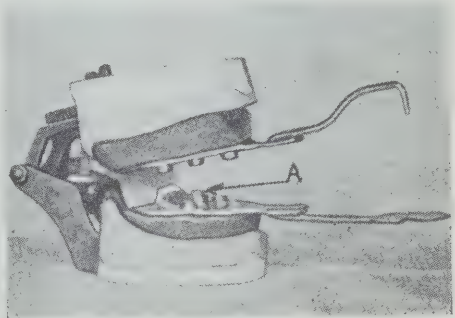


Figure 3.

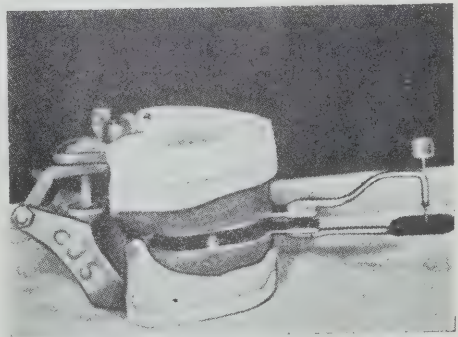


Figure 4.

holder, with style, to the upper. (Fig. 4) This part of the equipment is familiar, as similar to part of other systems, for securing the Gothic arch tracings. Before commencing with the registration, it is well to see that the baseplates are reasonably stable in their positions. If

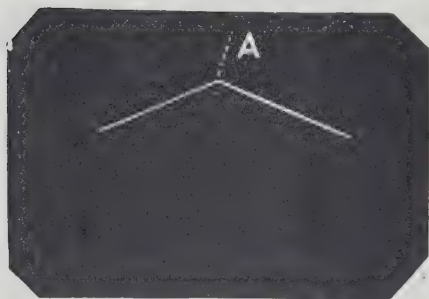


Figure 5.

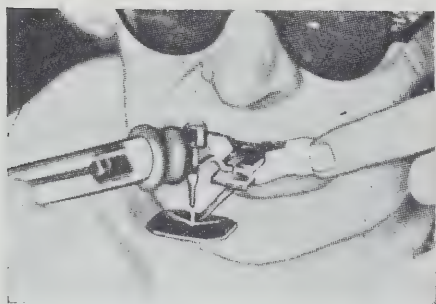


Figure 6.

not, the use of a powder is indicated to stabilize them until after the registrations are taken.

The surfaces of the registration plates are lubricated with a little vaseline, and the plates inserted in the mouth. The mandible is brought to what is considered to be the correct retruded position, and the style is dropped to contact with the graph plate. The patient is requested to perform the movements of protrusion and retrusion under moderate biting pressure. Then from the retruded position, the mandible is carried to right and left, all these movements being recorded on the smoked plate. (Fig. 5) If the lateral movements were made from the retruded position, the lateral tracings will appear as straight lines, meeting at an angle. It is possible that on the registration of the protrusive-retrusive movement previously

made, the record may show that the mandible reached a position of extreme retrusion, past the normal centric position, indicated by the point at which the lateral tracings meet. If so, this is an unnatural position, and should not be accepted as centric. True centric relation is correctly defined as follows:

The mandible is in centric relation when the heads of the condyles are in their most retruded positions, from which the jaw can make free lateral movement

Maintaining biting stress, with the style point resting on the intersection of the lateral tracings, the entire space between the registration plates is filled with plaster by means of the syringe. (Fig. 6) When set, this plaster record is removed, marked "centric", and set aside.

The former method of obtaining Gothic arch tracings by the use of compound bite-rims, met with many failures which are entirely avoided with this apparatus.

IMPORTANT ACHIEVEMENT

Having reached this point, let us stop to consider for a moment, an achievement which may have escaped our attention so far. It must be agreed that it is impossible to secure an evenly balanced bite by any method that depends upon contact of the material in all parts of the bite-rims. Tissues vary in tension and hardness, prominence, elasticity, etc. Compound or wax can never be evenly softened, considering the difference in bulk in the various parts. Evenly distributed pressure is impossible with the use of such materials. Irregularities of pressure thus obtained must be carried forward into the finished dentures, and will often be the cause of that too-familiar irritation of the tissues under the dentures. With the

use of the Stansbery check-bite appliances, there is only one point of contact over the entire area — where the screw head of the lower plate meets the lubricated smooth surface of the upper plate. The advantage thus obtained by evenly distributed pressure will be immediately apparent to anyone who has suffered, personally or vicariously, from those irritating sore areas particularly under the lower denture.

Many operators engaged in average denture work believe that the inclination of the condyle paths registered for both sides simultaneously, in the protrusive bite, is adequate for the ordinary type of denture which they commonly construct. For those operators, the protrusive record taken with these appliances offers a vastly improved registration. For those who commonly take centric, protrusive and both lateral records, not only will this method provide a much greater accuracy in definitely measured records, but the advantage of the third dimensional feature, provided by the adjustment of the screw head for the eccentric records, will become apparent at once.

Often the protrusive and lateral bites, taken by ordinary methods, are the most useless, inaccurate part of the entire technique. Bulky materials, uneven softening of compound or wax used for the records, shifting bases, lack of means for definitely measuring movements,—all contributed to the ineffectiveness of the records.

PROTRUSIVE RECORD

In preparation for the protrusive record, the screw head in the centre of the lower plate is raised $1\frac{1}{2}$ turns ($1\frac{1}{2}$ mms.) (Fig. 7) to accommodate cusp height, and the plates are re-inserted in the mouth. In the closed position, it

will be noted that the graph plate is slightly retruded from its former position, due to the forced depression of the mandible by the raising of the screw-head. Lateral tracings in the new position will, therefore, show a new pattern slightly forward of the previous one. With the mandible in protrusion to the extent of approximately 5 mm., that is, with the style point in a position 5 mm. posterior to the intersection of the new lateral tracings, the syringe is again employed to inject plaster between the plates. When set, this protrusive record is marked and set aside.

Difficulty is sometimes experienced in having the patient maintain the protrusive position while the plaster is setting. The writer uses a piece of soft copper plate, with holes drilled so that it may be fitted snugly over the lower surface of the upper check-bite plate, in intimate contact with the latter. The lower surface of this copper plate is smoked, it is placed in position, and the screw head of the lower forms contact

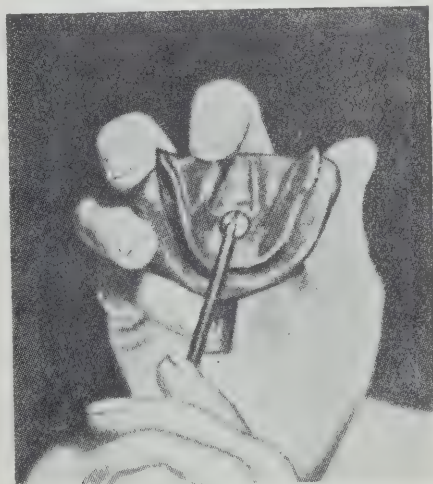


Figure 7.

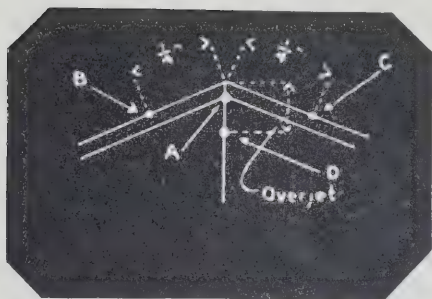


Figure 8.

with the smoked area. The mandible is carried to the desired protruded position, and the plates removed. The screw head will have marked on the smoked surface its position with the mandible in the desired position. A hole is made in the copper plate, large enough to provide a resting place for the head of the screw stud. The plates are re-inserted in the mouth, the copper plate in position on the upper. When the mandible is protruded now, to the desired position, the screw head drops into the resting place provided, relieving both patient and operator of much of the strain and uncertainty in attempting to hold the mandible in an unnatural position while the plaster is setting.

LATERAL RECORDS

If lateral records are desired, the graph plate is removed from the mouth and points are marked off, 6 mm. to each side of the point of intersection of the new tracings. Returning the plate to the mouth, the patient is directed to move the mandible laterally until the style point reaches one of the points marked, when plaster is again injected between the plates. This is repeated for the other side, and the records are complete. (See points B and C, Fig. 8.) These lateral records represent a movement of approximately 3 mm. in the molar region.

In the laboratory, the lower cast is re-

moved from the articulator, and, using the centric record between the plates, the lower cast is attached to the articulator in the new accurate centric position. With the other records, the adjustments, as permitted by the type of articulator used, are simple, and the set-up is completed. In connection with this latter operation, it is urgently suggested that every attempt be made to keep the lower teeth over the mandibular ridge, or, if anything, slightly inside it. The cases are finished as desired, and if the work has been carefully done, the results will surely show justification for the time spent in preparation, and the extra small expense connected with the purchase of the check-bite plates.

Again it is emphasized that if the operator has time and money to spend on elaborate and intricate technique, and their accompanying instruments and equipment, there is much to be gained from them. The proponents of these systems, which cannot but be bewildering to the average busy operator, are doing a highly necessary work, but the writer feels that because of the great variation, and seeming inconsistency of the different methods, the average man is being passed by. As a result, the latter, in more or less despair, is inclined to cling closely to the old compound, or compound-plaster impressions, wax bites, and, all too often, either commercial laboratory, or plain line articulator set-ups, without benefit of face-bow, or eccentric registrations.

Is it too much to hope that, one of these days, our leading prosthetists will join together in an effort to standardize a reasonably practicable technique for the busy general practitioner?

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1. Dr. Jaffe—Dental Digest, January, 1933.
2. Dr. C. J. Stansbery—Dental Digest, June, 1933.

A TRIBUTE

To Dr. Andrew J. McDonagh, on the Occasion of a Testimonial Dinner
Tendered him by his Confrères.

By GEORGE W. GRIEVE

A PHILOSOPHER has said: "Character is the one permanent element in human history, and the man who neglects its highest growth and development is a traitor to himself. Character indicates the real worth of the individual, and enables him to attain his loftiest aspirations." It would be impossible for any of us to say whether or not Dr. McDonagh has attained his loftiest aspirations, but we can say that he has reached heights in his professional life, and in his activities as a citizen, that are gratifying to us, and should be extremely so to him. To attain such aspirations requires a devotion to high ideals, to duty and to one's task, and it is unnecessary to emphasize the fact that Dr. McDonagh has shown this devotion to all of these. He is a man who, in his professional career, has received national and international recognition such as few have been able to achieve.

While a great measure of this success may have been the result of his burning the midnight oil, there is no doubt that a definite part of it has been due to the genial, friendly spirit of the man and to his sense of humour. If you discuss with him some of your problems, he manifests a keen interest therein and a desire to assist you, if possible, in their solution, and let me express here what I have heard many men say that they believe he

possesses the broadest general knowledge of dentistry of any man they know.

Dr. McDonagh has probably done as much research work as any dentist in Canada, and an outstanding quality in his professional life has been always to give credit where credit is due, as is evidenced by a statement which he has been heard to make that often he was following along the path which some other person's work had led him. He has done much original work, and has never capitalized thereon in any way, but recompense has, nevertheless, come to him in the form of the lasting appreciation and friendship of his fellow-workers.

The geniality of our guest might lead many to say that he is a true son of Erin; he is even better than that—a mixture of Irish and Scotch, his mother being a MacDonald.

Now, what has our honoured guest accomplished that we should single him out for special tribute? Many things which, by the way, have not been done for the purpose of his own aggrandizement, but for the common weal. He is an outstanding example of that quality — courage — portrayed in a poem — "Heroism"*, excerpts from which appear on the back of our menu cards this evening. In the words of this poem, he has ever had the "daring to cut loose and

*An excerpt from the poem "Heroism" appears on the first page of this issue of the Journal.

think alone", thus early in his professional career attaining leadership.

About forty-five years ago, or thereabouts, Dr. McDonagh introduced in this city the use of cocaine as a local anaesthetic, and a little later substituted for cocaine sterile normal salt solution, under pressure, in extractions. Possibly the first operation in Canada of the implantation of a tooth was performed by the much-revered Dean Willmott, in the office of our guest, with the latter assisting. Following this, Dr. McDonagh performed this intricate operation for more patients, probably, than any other man in Canada, if not anywhere. Through research, he established the fact that micro-organisms are to be found in the pulps of the majority of vital teeth having no apparent cavities. While in general practice, Dr. McDonagh was for a time Professor of Crown and Bridgework in the Royal College of Dental Surgeons of Ontario.

About the year 1905, upon the initiative of our honoured guest, and with the coöperation of our beloved Honorary Dean Webster, the late Dean Willmott and half a dozen others, the pioneer work in the field of public dental health activity was begun. I refer to the organization of the Canadian Oral Prophylactic Association, which came about as a result of the chemical analysis of most of the tooth pastes then on the market, which showed that there were none which did not contain harmful ingredients, chiefly in the menstrum—simple syrup, honey, starch, etc. Dr. McDonagh demonstrated at that time that glycerine could be utilized as an ideal menstrum, and the C. O. P. A.'s product—Hutax—was manufactured upon the formula which was suggested by this group. That Dr. McDonagh's idea was practical, is

evidenced by the fact that within a very few years all reliable tooth pastes contained glycerine as their menstrum, thereby revolutionizing tooth paste manufacture.

The C. O. P. A. was organized to carry on dental health educational work, which activity was financed through royalties obtained from the sale of its products—Hutax tooth paste, and later Hutax tooth brushes. The design of its brush was also an improvement, and was later copied by many other manufacturers. In this pioneer work Dr. McDonagh, for many years, may have been misunderstood by some, but he persisted, and did a masterful service for the citizens of Canada when he induced Dr. Harry S. Thomson to undertake the educational work of this Association. The Canadian Dental Hygiene Council was eventually the outcome of this organization, the C. O. P. A. turning over its educational work to this Council, as well as the services of Dr. Thomson to carry on the work. Through the efforts of Dr. Thomson, Dr. W. C. Trotter and others, the C. O. P. A.'s funds were later augmented by contributions from the Red Cross organization, the Canadian Insurance Officers' Association and the Dominion Government. You all know the wonderful success which is attending the efforts of Dr. Thomson, under the direction of the C. D. H. C., in spreading, from coast to coast, the gospel of dental health, and this has largely come about as a result of the foresight of our guest of this evening.

Dr. McDonagh commenced specialization in periodontia about thirty years ago, and later became the Professor of Periodontology in the Royal College of Dental Surgeons of Ontario, establishing the first chair in the world for the ex-

clusive teaching of this subject. He coined a number of terms in this specialty, which were later adopted officially by the American Academy of Periodontology. It was he who first taught in Canada, at least, that torque and leverage were the most potent factors in causing periodontoclasia, as well as failure in fixed bridgework.

Dr. McDonagh was a member of the Dental Research Committee of the University of Toronto from its inception until the Dental College became a faculty of the University which automatically made its existence unnecessary. Under this Committee, and financed by the C. O. P. A., the research work carried on under Dr. J. J. McKenzie, Dr. Harry S. Thomson and Miss Fraser, among other things, gave to the world many new facts concerning micro-organisms, and of outstanding benefit to humanity was their research in copper amalgam, which was later still further developed by Dr. Fred Husband and others.

Our guest was twice president of the Toronto Dental Society, is a past-president, and was one of the founders of the American Academy of Periodontology, and for several years was chairman of the Committee on Research and Nomenclature of that body. He was the first president of the Canadian Section of the International Association for Dental Research, and is now associate editor of the journal published by that association, as well as assistant editor of another scientific journal — "The Apollonian". For a number of years Dr. McDonagh has been Dental Consultant on St. Michael's Hospital staff.

One of Dr. McDonagh's much-prized possessions is a certificate, signed by the Duke of Connaught, then Governor-General of Canada, appointing him official representative of the Canadian government to the sixth Dental Congress in London in the year 1914.

Our honoured guest was most fortunate and happy in his choice of a help-mate, as Mrs. McDonagh, much-beloved and a lady of grace and charm, has herself done much in activities of various kinds, not only in dental circles, but as well in charitable organizations, to the extent that her outstanding service to humanity has been recognized in that she is the recipient of His Majesty's Jubilee Medal. Two of their sons occupy high places, one in the church and the other in professional life, and in the latter's work for several years in the interests of the Great War Veterans' Association he has been granted His Majesty's Jubilee Medal. Surely this family has not lived unto itself alone.

Dr. McDonagh is active in sports, and years ago organized an alley bowling club among dentists, which has proven a source of much pleasure and good fellowship. To this club he contributed a handsome cup for competition. One of the club's members has a propensity for verse, and recently penned a jovial tribute to the club's organizer, later adding a postscript which I quote in closing:—

*"May he be spared for many years
To use his voice and pen;
He is beloved by every one—
One of God's noblemen."*

—W. A. B.

Manhood Overtops All Titles.—Emerson.

THE NEW HEADQUARTERS OF THE BRITISH DENTAL ASSOCIATION

For the following information we are indebted to the editor of the British Dental Journal,
H. R. F. BROOKS, J.P., L.D.S., Edin., Glas., and I.

MEMBERS of the dental profession not only in Great Britain, but throughout the Empire, related to it by such close and intimate ties of brotherhood, will naturally take a sympathetic interest in the proceedings and progress of the British Dental Association. In the Dominion of Canada, the scene of the memorable "Joint Meeting" three years ago, and the affiliation of whose National Dental Association with that in the Mother Country represents very much more than a mere formal union, a short account of recent developments will no doubt be welcomed. Since the founding of the Association fifty-five years ago by

less than two hundred dentists, under the leadership of John Tomes, the membership has steadily increased until it now considerably exceeds four thousand, with sixteen branches and numerous sections in the United Kingdom, the National Associations of Australia, Canada, Ceylon, the Irish Free State, Jamaica, New Zealand and South Africa as affiliated bodies. It is not in the direction of numbers only, however, that the importance and influence of the Association has grown. The passing of the 1921 Act of Parliament, which to the restriction of title by that of 1878 added the immediate prohibition of practice by any but registered persons, and of future entries except by trained and qualified dental surgeons, prepared the way for extended service and responsibility, with a corresponding advance of status for the profession. Arrangements for the treatment of school children, expectant and nursing mothers, insured persons, the armed forces of the Crown, the police, and the necessitous poor under the direction of Public Assistance Committees, together with measures adopted for advancing



FRONT VIEW,
13, HILL STREET, BERKELEY SQUARE.



BACK OF ENTRANCE HALL LEADING TO ROBERT LINDSAY LIBRARY.

scientific and practising efficiency, so greatly enlarged the sphere of operations that additions to the staff and premises, suitable for the growing requirements, became an urgent necessity. New Headquarters in Hill Street, Berkeley Square, have therefore replaced the much too limited accommodation in Russell Square, and were officially opened by Mr. Geoffrey Shakespeare, M.P., the Parliamentary Secretary to the Minister of Health—in the unavoidable absence through illness of the Minister, Sir Hilton Young—on April 12th. The building is an imposing and commodious edifice in the Mayfair district, and provides excellent accommodation for the Association's many activities. On the ground floor,

the entrance hall with its marble floor, columns and staircases, gives access to the offices for the General Secretary and staff, the members' Common Room, and, at a slightly lower level, the Library, dedicated and named as a Memorial to the devoted services of Robert Lindsay, the first Dental Secretary of the Association. On the first floor, similarly approached by a handsome divided marble staircase, is the Board Room, originally a ballroom, an apartment with beautifully panelled ceiling, Adams fireplaces, and large bay, suitably furnished for seating some 200 persons. Outside, at the end of a spacious lounge landing, is the Dental Secretary's room. The second floor is allocated to the Council Room,

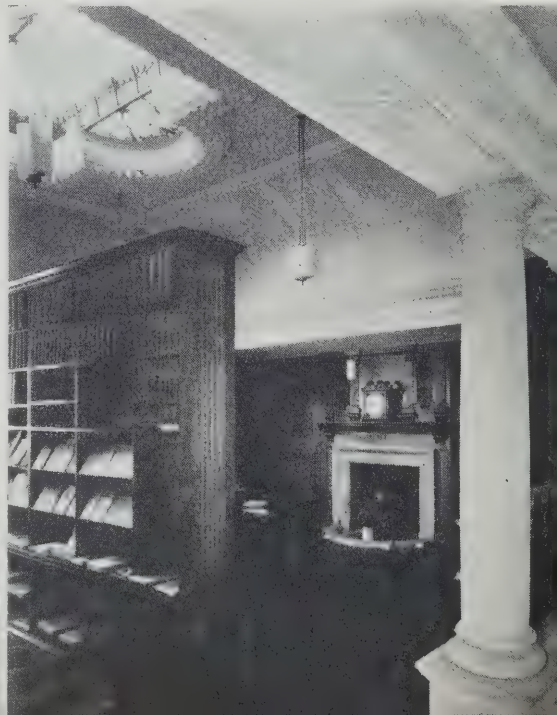


"PART OF MEMBERS' COMMON ROOM."

specimens. The accompanying photographs illustrate some of the features of the Association house, with which it is hoped that many visitors from Canada and other Dominions will make a personal acquaintance during the Empire Meeting in London next year.

*"Build thee more stately mansions, O
my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more
vast,
Till thou at length art free,
Leaving thine outgrown shell by life's
unresting sea!"*

worthily fitted and equipped for its dignified purpose, the Editor's sanctum, the Assistant Dental Secretary's office, and a large committee room. Other committee rooms, the nucleus of a historical museum, and the offices of the Dentists' Provident Society, are to be found on the third floor, whilst the top of the building is intended to be utilized for study and research purposes. From the roomy basement, with its members' cloak rooms, and lavatory accommodation, caretaker's quarters, strong and storage rooms, an automatic passenger lift communicates with the ground, first, second and third floors. It is proposed to line the galleries round the lighting well of the second and third floors with cases for museum



"PART OF ROBERT LINDSAY LIBRARY."

ONTARIO DENTAL ASSOCIATION CONVENTION

By T. R. MARSHALL, D.D.S., Toronto, Ontario

THE Ontario Dental Association held its annual convention at the Royal York Hotel on May 20-22. Dr. W. H. Woodrow with his able board and committees carried the meeting through with dignity and dispatch. The attendance, including members, guests, ladies and exhibitors, was 866; dental nurses and assistants, 153.

The first item on the program was a series of fifty table clinics presented by members of the association and arranged by Dr. W. J. Kerr, president of the Toronto Academy of Dentistry. This feature of any convention is always well received and on this occasion it was a great incentive to members being on time for the opening session. These clinics were splendid and represent a great deal of effort for those taking part, but it is some compensation when a goodly crowd of interested associates turn out to see your presentation.

At the luncheon meeting on the opening day the speakers were Mayor James Simpson, Hon. Dr. J. A. Faulkner and Dr. T. C. Routley. Mayor Simpson, after welcoming the guests to the city, spoke of the evolution of Toronto's splendid dental health service. He said that Toronto's public health department was the finest in the world and that it had been recognized as such at Geneva. The

dental division under the direction of Dr. E. A. Grant was a credit to its director. Mayor Simpson also spoke of the progress dentistry has made and hoped the profession would continue its research and dental education to the end that the best possible dental service would be available to the people. In this connection it was suggested that the dental profession give some thought to reorganizing its services so that more of the public could benefit from dental care.

Dr. Faulkner, Minister of Health in the Province of Ontario, gave a short address in which he thanked the profession for their splendid co-operation in public health matters. He eulogized and commended Col. W. G. Thompson for his services to the department and to his profession and further added that he hoped the present Government would soon be able to provide a salary for the post of a full time Director of Dental Services and that Col. Thompson would continue in the office.

Dr. T. C. Routley of the Canadian Medical Association gave a splendid address dealing with mutual problems of medicine and dentistry. "Do not expect one hundred per cent membership in your societies, you'll never get it; but you will get the workers and those who are interested in professional advance-

ment," said the speaker. Dr. Routley suggested that members of our smaller societies should not be satisfied to attend a meeting for the purpose of hearing a paper or observing a clinic alone, but they should make a contribution to the profession at large in meeting problems of the day. That is how ideas are born, and when we meet in larger conventions we are able to accomplish things.

Dr. W. H. Woodrow in presenting his presidential address made a survey of the accomplishments in his year of office. He made special mention of the "*Journal of the Canadian Dental Association*" and its possibilities as a mouth-piece for Canadian dentistry.

Perhaps the outstanding paper of the convention was "Arthritis" by Dr. Ralph Pemberton, of Philadelphia. It was said by one member to be worth the price of admission. The essayist very definitely pointed out that the cause of arthritis was not focal infection, but it sometimes was a contributing factor. Here are a few statements gleaned from the address:

—"Arthritis is not a disease of the joints, but a disease with joint manifestations."

—"Arthritis is a syndrome and cannot be approached through any one avenue."

—"Arthritis is as much an expression of ill health as a cause of ill health."

—"The great systems of the body are affected by arthritis—such as the vascular system, the nervous system, the gastrointestinal system."

—"Focal infection is often the precipitating cause of disease."

—"Focal infection has a most important bearing on general disease but may be overdone."

—"In treatment of arthritis first estab-

lish physiological regimen in the systems of the body."

—"Rest is of primary importance in treatment because of favourable physiologic reactions."

Dr. Robert Dunlop in his discussion indicated the necessity of removing infected teeth (foci of infection) as a part of general treatment to raise patients' resistance to disease.

Dr. Stafne of the Mayo Clinic gave a splendid dissertation on x-ray interpretation accompanied by slides. He made special mention of cementomas and advised his listeners to use caution in diagnosing cysts in the incisor regions when teeth give vital tests.

In connection with radiography, a group clinic sponsored by members of the Ottawa Dental Society was well done.

Dr. Vernon Fisk gave an interesting demonstration under the title "A New Era in Dentistry?" Dr. Fisk pointed out that there were great structural variations in the medullary portion of alveolar bone, which could be co-related with findings in blood dyscrasias. It would seem that unfavourable bone formation could account for many partial and sometimes complete failures in extensive restorations. When these blood dyscrasias are discovered, especially in the young individual, many of our present failures can be eliminated. Perhaps a new era in dentistry is in the offing!

There were many very fine group clinics, and all were immensely popular. Dr. Frank Martin gave a two hour clinic in which he described his technique of immediate denture service, and followed his discussion by a clinic with a patient. The clinic demonstrated how to handle an average case, the surgery being completed and the denture with labial gum

inserted before the patient was dismissed.

Drs. Kennedy, of London, and Frawley, of Toronto, gave exodontia clinics under general anaesthesia and these were well received. Both operators gave their patients half a grain of nembutal half an hour before operation as premedication.

Drs. Irving Ante, R. J. Godfrey and G. V. Morton gave clinics on inlays and partial dentures. They were using a new inlay investment made by mixing four parts Moon Brand silex to one of coecal by volume. This investment produces beautiful and accurate castings. Make the mix fairly thick (pasty), allow to set half to one hour, heat slowly for half an hour, then raise to red heat and cast.

Dr. Spence Clappison presented a splendid clinic on opening bites by operative and prosthetic means.

Four members of the Toronto East Dental Society gave a demonstration on full denture construction. They showed the various steps in carrying the case through to completion. Dr. Prendergast presented his work on Speech Defects and Phonetics and Dr. J. N. Stewart gave a demonstration of applied art in denture construction under the caption "Beauty in Dentistry".

Dr. McDonagh showed how a receding gum line could be stopped and be brought back as much as half to three-quarters of an inch in special cases by using orthodontic methods and by using a specially constructed hollow porcelain inlay or gold and silicate inlays when indicated. These inlays are used to protect the denuded dentine under the gum after you reduce the periphery of the root where there has been an erosion or a cavity just at or under the gingival margin.

Other clinicians were Dr. Fulton Ris-

den who gave two clinics at Western Hospital, Dr. T. L. Marsh on Diet, Dr. L. F. Krueger on Root Canal Therapy, Dr. A. E. Higgins and Dr. Arnold Mason on Education and Diagnosis respectively, Dr. S. A. MacGregor on Children's Dentistry and Toronto Orthodontia Club on Orthodontia for general practitioner, all of which were a source of innumerable helpful suggestions.

The noon-day luncheon on the second day of the convention was a public dental health function. The speakers were Dr. J. S. Lapp, Dr. Arthur Ellis and Dr. E. T. Guest. The meeting was well attended and the accomplishments of this committee as reported were well received. The general feeling of the majority of those assembled favoured some form of dental health insurance and indicated their approval of what had been done in this connection.

One of the most pleasant functions of the convention was the president's dinner and dance. This was arranged by Mrs. E. W. Paul and her committee of ladies. It deserved a little better attendance than it received as the entire program was excellent and quite the equal of anything arranged for the entertainment of delegates in previous years. Mrs. Paul and her committee are to be congratulated on their efforts.

The convention closed with the usual elections and followed by a golf game at Weston Golf Club. There is no doubt but that those who take the time to attend the annual meeting of the O.D.A. are amply repaid for their effort. They learn some new things, some old ones over again, learn that associates in other places have problems as they have, make new friends and meet old ones. Isn't it worth while?

SASKATCHEWAN AND STATE MEDICINE

By F. C. HARWOOD, D.D.S., Moose Jaw, Saskatchewan

IN view of the present interest in the question of state medicine, the editor of this *Journal* has requested a concise statement as to the extent to which Saskatchewan is already committed to a form of state medicine, and the proposals for its extension in the near future.

For many years this province has been providing what might be termed state medical services on quite an extensive scale.

Under the Department of Health, various preventive services and the education of the public in health matters have been actively carried on by the Minister and his staff, including public health nurses provided by the department. It has led in campaigns against tuberculosis, diphtheria, and cancer, and has dealt successfully with the problem of sanitation. The campaign against tuberculosis has been so effective that this province has the lowest per capita death rate for this disease in the world.

The government has built and maintains three sanatoria for the treatment of tuberculosis. It distributes, also, sera and vaccines and provides treatment for venereal disease at government dispensaries. Cancer clinics are maintained, where radium is available for the treatment of that disease, and a pathological laboratory provides examinations gratis. Incidentally, this latter made nearly 40,000 examinations last year. In all cases care and treatment are provided free to the patient, the cost being borne by direct

taxation or by public revenues. The government assists also seventy-one hospitals in the province.

The municipalities, as well as the provincial government, are developing community health services. Twenty at present provide free hospitalization for residents, fifty-nine employ a physician full time, and fifty more provide part time medical services. The cost is again defrayed by direct taxation.

Under the Workmen's Compensation Act, the province provides medical and dental care and hospitalization to those injured in industry.

During the depression, the government has been making a monthly payment to physicians and dentists in the drought areas for emergency services to those on relief, and in the towns and cities of the same area a small amount is allowed to cover the cost of materials for services to rural relief patients. The cities in the province are providing quite a complete medical service, including hospitalization, for those on relief, but only emergency dental services are supplied, principally extractions.

So much for conditions at present! What of the proposals for the future?

A year ago a committee of the legislature was appointed to gather data pertinent to this subject, and applicable to this province. The Minister of Health has stated that when this committee brings in its report, legislation will be introduced embodying its recommenda-

tions. He also laid down certain essentials of a system for supplying medical services to all, which would be included in such legislation. These, in his opinion, are as follows:

1. It must safeguard the quality of medical services and preserve the essential personal relation between patient and physician, as well as retain for the patient the right of choice of a physician.

2. The system must provide for the future development of preventive and therapeutic services to meet the needs of substantially all the people.

3. The plan must provide service on financial terms which the people can and will meet, through either individual or collective resources.

4. It must include a well organized and properly supported public health program, looking to the prevention of disease.

5. A major essential of a satisfactory medical service is the provision for adequate and assured compensation to physicians, dentists, nurses, and other scientific practitioners, and adequate support to hospitals.

WESTERN CANADA DENTAL SOCIETY CONVENTION

By JOHN W. CLAY, D.D.S., Calgary, Alberta

AFTER some months of careful preparation, the convention of the Western Canada Dental Society was held at the Palliser Hotel in Calgary on June third, fourth and fifth.

Now that the tumult and the shouting have died and the smoke has cleared away, it is well to assess the results, and consider what has been achieved. What has been the gain to dentistry and to those who practise their profession in Western Canada?

Under the very capable chairmanship of the president, Dr. L. T. Allen, of Lethbridge, and with the willing support of the various local committees, the sessions were marked by punctuality and efficiency. An attendance of nearly two hundred dentists and about one hundred ladies well repaid the efforts of the forty members of the Calgary Dental Society.

Dr. Clarence O. Simpson, of St. Louis,

Dr. John T. Ryan, of Mount Vernon, and Dr. Roy F. West, of Seattle, ably presented a very complete program on Radiodontia, Gold Foil and Inlays, and Exodontia. A good variety of table clinics rounded out a program of interest and value.

The principal gold trophy, the Western Canada cup, went to Dr. P. G. Atkinson, at the end of a close competition on one of those afternoons of unpleasant weather, which Westerners always speak of as very exceptional. Dr. L. A. Maxwell finished a close second with the low net score.

Two unusual items on the program should be recorded to show the spirit of good-will and friendship which exists in Western Canadian dental groups.

At the request of the Calgary Dental Society, an illuminated address was presented to Dr. E. M. Doyle, of Calgary,

as a tribute of friendship, and as an appreciation of his many services to dentistry in Western Canada. The significant feature of this presentation is that the recipient is not among those older men whose active days are over, but is in the full tide of professional activities.

A silver platter was also presented to Dr. A. M. Palmer, from the Calgary

Dental Society for his untiring and unending work as chairman of the convention committees, work which contributed so much towards the success of the meeting.

An invitation from the Saskatoon Dental Society to hold the next convention in Saskatoon, in 1937, was accepted by the Board of Delegates.

EASTERN ONTARIO DENTAL ASSOCIATION

THE annual convention of the Eastern Ontario Dental Association will be held in Ottawa, September 9th-10th. Dr. J. J. Posner, of New York City, will speak on local anaesthesia. Mr. William M. Joy, of Philadelphia, will speak on dental prosthesis. The Ottawa X-ray

Club of seven men will give a clinic on x-ray technique, developing and interpretation. There will be the usual after-luncheon speakers and entertainment, also golf and bowling. A most interesting and profitable time is expected.

REPORT ON MOUTH INFECTION IN ARTHRITIC CASES

By MARION JOY, D.D.S., Toronto, Ontario.

IT is a common belief that people suffering from arthritis have more evidence of foci of infection in the mouth than people in normal health, or those suffering from other diseases. An examination of 300 patients, bed patients, at the Toronto General Hospital between June, 1933, and February, 1934, gives us the following table.

<i>No. patients with</i>	<i>Dental Disease</i>	<i>Edentulous</i>	<i>Healthy Mouths</i>
100 Arthritis	39 (17 marked 22 minor)	35	26
100 Diabetes	45 (18 marked 27 minor)	48	7
100 Gastric & Duodenal ulcer	63 (14 marked 49 minor)	17	20

Marked dental disease—several teeth needing extraction.

Minor dental disease—1 or 2 teeth needing extraction, or disease which will clear up upon treatment.

Edentulous patients, of course, show that they have had dental disease, and in the majority of cases, it has been eradicated.

June 29, 1935.

THE FORUM

THE NUMBER OF TOOTH BRUSHES AMONG STUDENTS

THE public health office of the German Hygiene Institute of Dresden recently made an extensive inquiry in German schools on how many students possess brushes. The results are as surprising as deplorable. Of 7,000 schools with 900,000 students, 42.4 per cent

owned their own tooth brushes, 18.2 per cent had a family brush, and 39.4 per cent had none. To this must be added that close to 5,000,000 school children at least do not use their own tooth brushes.—*From Foreign Letters in the Journal of the A.M.A.*

DENTISTRY FOR DOGS

THERE is a dentist in Stockholm who specializes in the treatment of dogs. He fills their teeth and even fits them with bridges. Naturally it is more difficult to treat dogs' teeth and the cost is by no means small. The dog-dentist is at pains to preserve full sets of natural teeth for his four-legged patients as far as possible and he only draws a tooth if the disease is far advanced. The teeth are drilled out and filled in the ordinary way. In the Swedish capital a great

many valuable dogs may be seen with gold fillings and even gold teeth in their mouths. The dentist declares that dogs suffer from toothache much oftener than is generally supposed and when owners wonder why their dogs are apathetic or irritable they seldom realize that the cause of it is toothache. The practice of canine dentistry is a thriving one, for there are many dog owners who spare no expense to keep their pets in good health.

—*From the Indian Dental Journal.*

BEAUTY

WE HAVE called people dental cripples. We have thrown what advertising the dentist gets at people in a form that nobody likes; namely, we have told them that they are sick, or are going to be; but instead of getting people to like dentistry and making them want it, we have put in the background the one thing that we all know will make people buy dentistry and will make them willing to pay a reasonable fee for it.

That thing is one over which the dentist has more control than anyone else in the world, and that is the beauty and appearance of the individual. People do not value health until they are ill, but the question of appearance is closer home. They will do anything to be better looking.

We have said that pain keeps people away from the dentist. *Pain will always keep people away from dentists as long*

as that pain is associated with health, but pain never kept anybody away from a beauty shop, be it small shoes, permanent waves, or what not. So it seems to me that we can do something we have always wanted to do. We can take pain out of dentistry by putting beauty first for a while. It is hard to make people buy health. It is repulsive to tell people they are ill, but people like to be beautiful at any sacrifice or expense. Beautiful things are the most sought-after things in the world today.—*Dental News*.



DRAWN BY MARGE

**"It's No Use, Mabel—I Haven't Felt the Same
About You Since You Lost Your Front Teeth!"**

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Post, copyright 1934 by the Curtis Publishing Company.*



PRINCE EDWARD ISLAND



W. T. Waye, Charlottetown

NOVA SCOTIA



A. W. Faulkner, Halifax

NEW BRUNSWICK



J. F. Edgcombe, Saint John

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

SASKATCHEWAN



F. C. Harwood, Moose Jaw

ALBERTA



John Clay, Calgary

MANITOBA



J. F. Morrison, Winnipeg

BRITISH COLUMBIA



J. S. Bricker, Vancouver

CONTENTMENT

The Medical Times for June says editorially, "There is much tragedy in the position held by many leading men in the profession, who now find themselves in a difficult and unprecedented economic set-up. These men are still young, still vigorous and with successful careers behind them; in fact, many of them are subsisting today, in part, upon the fruits of past success. They are busy enough and more capable than ever, but the emoluments of private practice are not what they used to be."

How true a picture this paints of many in our own Canadian profession today! Men who have worked and studied hard and arrived at the point where they felt definitely established and that the future was assured, now find that in order to balance their budget their standard of living must be lowered. This is a painful process usually and one that is not faced always with the courage and the determination to make the best of conditions, that the circumstances demand; consequently there is much heartache and disappointment. Lines deepen on the brow, health begins to fail, and the later stages are a calamity if sane thinking does not intervene.

In E. P. Perrine's book entitled "Doctor, Build a Better Practice", the following story is told in these words:

"There was a king who had conquered all his enemies. He had amassed a huge fortune. He lived in a palace where gold, silver and precious stones were as common as the dust on the ground. He had an army of men and women forced to fight for his comfort and pleasure. But for all that he had no friends, and he was not happy—he had lost his health, his peace of mind, and his joy of soul.

He sent for all his physicians and for all his wise men, but not one of them, it seemed, could bring him relief. Finally a strolling soothsayer said that if the king would sleep for three nights in a shirt that belonged to a perfectly healthy and happy man, the king would be cured of all his ills and would become a happy man himself.

The king immediately sent out his couriers into all parts of the kingdom to find a perfectly happy and contented man, that he might borrow his shirt; but every man they found seemed to have troubles of his own. Not one of them would say that he was perfectly healthy and happy.

One morning, however, as the king was travelling in state, he saw a peasant on his way to work. The man was singing lustily and his face was radiant with joy, so that the king felt sure at last that he had found his man. He called the fellow to his royal carriage and asked him if he were perfectly happy. The man replied that he was. "I have a little home," he said, "and a good wife and children who love me. I have my work and strength to do it. I am at peace with God and I have my friends—why should I not be perfectly happy?"

Then the king made known to him his own sorry plight and asked him for the loan of his shirt. "Alas," the man said, "I have not a shirt to my name." He pulled aside his coat, there was his bare skin. "Happiness is not something that you can put on and take off like a shirt. Happiness comes from within."

This story has a message for many a man practising dentistry in these days, particularly for men who have worked and even slaved, who have invested and thought they had insured their declining years against possible want and hardship, and now these assets have been dissipated through no fault of their own, with the result that happiness has vanished and the world seems hard and unjust. It would help to remember the words of Cicero: "To be content with what we possess is the greatest and most secure of riches," or those of Socrates: "He is richest who is content with the least, for content is the wealth of nature."

A millionaire may purchase hundreds of paintings by great masters, and yet the poor man or woman may feast on them and carry away a treasure that the owner never knew existed. A collector may pay an immense sum for some rare copy of Shakespeare, but the young man from the humble home can revel in the riches of Hamlet. Paul was never so great as when he was in prison.

The Chinese editor Lin Yutang, in discussing the virtues of his people,



CONTENTMENT

From the private collection of M.H.G.

points out that in spite of the low standard of living of the Chinese masses they are probably more contented than western people, class for class. He states that the Chinese approach to happiness is a negative one, that he may want a number of things but he does not insist upon having them if they are not within his reach, and he will get just as much pleasure out of the things that are available, even if these things be but a caged bird, a few pots of flowers, and the beauty of the moon. He is as content as if he possessed many of the luxuries of life. The secret of the Chinese genius for contentment, states the editor, is his strong determination to get the best out of life, his keen desire to enjoy what he has, and to have no regrets if he fails.

In these days, while we must work and support our national organization with all the enthusiasm possible, while we must make every effort individually and collectively to improve conditions in the profession and out of it, we must learn to place the emphasis in life where it belongs and to cultivate the habit of seeing beauty and true riches everywhere. Only he is rich who can enjoy a thing without owning it. William Pitt, the great English commoner, looked upon money as worthless compared with the public good and the public esteem.

Isabel Cameron, in her Scottish classic, "The Doctor", says of her hero: "His views of God were like himself, great and spacious. 'Money?' he cried one day, 'it's just God's gift to His children who can't understand anything better. He gives them money to play with, just as we give little children ha'pennies to please them. But to His own dear children He gives His great gifts, wisdom and understanding, so that they see wondrous things out of His law. These are the things that matter, because they abide.'" This is indeed a comforting thought in these days of materialism.

Dentistry gives an incomparable service to mankind because it relieves pain, arrests disease and prolongs life; so let us practise our profession nobly, stressing character, which is perpetual wealth. Without character the millionaire becomes a pauper. What are houses and lands, stocks and bonds, automobiles and other luxuries, compared with character! And above all, let us be content, as Shakespeare has so beautifully expressed in the words:

*"My crown is in my heart, not on my head,
Nor decked with diamonds and Indian stones,
Nor to be seen; my crown is called content;
A crown it is that seldom kings enjoy."*

NEWS FROM THE PROVINCES

NEW BRUNSWICK

The New Brunswick Dental Society met in convention July 8-9.

Doctors R. E. McMahon and I. K. Lowry, of Montreal, gave a combined clinic on Extraction and Preparation of the Mouth for Immediate Denture Service. Dr. McMahon also gave a further clinic on Impactions.

Dr. A. D. A. Mason, of Toronto, spoke on Simplified Gold Inlay Technique.

The following table clinics were presented: "Amalgams", by Dr. Walter Irvine—Boston, Mass.

"Common Difficulties in Inlay Technique", by Dr. John F. Edgecombe—St. John, N.B.

"Electro Welding and Soldering", by Dr. A. J. Cormier—Moncton, N.B.

"Exhibition of Partial and Full Prosthetic Restorations", Allen and Rollaston—Toronto, Ont.

The Round Table Conference proved very helpful, as questions were asked of the clinicians and time allowed to discuss the problems.

Dr. Harry Thomson, Dr. Mason, and other visitors spoke at the banquet which was held in the Windsor Hotel.

NOVA SCOTIA

Dr. Stephen McIsaac has been reappointed as school dentist for Glace Bay.

The forty-fifth annual convention of the Nova Scotia Dental Association was held at Pictou Lodge, July 5-6.

The following officers were elected:—

President—V. D. Crowe, Truro.

Senior Vice-President—V. C. Calkin, New Glasgow.

Junior Vice-President—F. R. Duxbury, Halifax.

Secretary-Treasurer — J. Stanley Bagnall, Halifax.

Additional members of the Executive:—George D. Chudleigh, Halifax; Dominion Dental Council Representative, W. C. Oxner, Halifax; Alternate, V. D. Crowe, Truro; Canadian Dental Association Representative, A. W. Faulkner, Halifax; Alternate, S. G. Ritchie, Halifax.

Doctors W. H. H. Beckworth, Halifax; C. S. McArthur, Truro, and W. C. Oxner, Halifax, were appointed to the provincial board.

Next year's convention will be held in Digby.

SASKATCHEWAN

The Regina Dental Society entertained the members of the Moose Jaw Dental Society on May 11th, holding a late afternoon and evening session. In the afternoon Dr. A. J. Brett, of Regina, gave a very interesting table clinic, illustrating a technique for removal of infected third molars.

Dr. W. F. Smith gave a very instructive clinic and talk on the Stansbery method of full denture service, using both models and a patient for the purpose. Both clinics were of a very practical nature and very much appreciated. In the evening a dinner was tendered the visitors, after which a general discussion took place on subjects of interest to the profession.

At the election of officers, Dr. E. W. Mounteer was elected president, Dr. Roy Johnson vice-president, and Dr. J. McGregor secretary-treasurer.

Dr. Brownlee, of Winnipeg, recently met a committee of Regina and Moose Jaw Dentists to explain the aims and objects of the Canadian Foundation for Preventive Dentistry and outlined its work in Manitoba.

The large number of Saskatchewan Dentists who attended the Western Canada Convention in Calgary report a very successful and profitable convention. Congratulations, Calgary!

The Council prosecuted Mr. V. B. Szilagyi of Spiritwood, for illegal practice. As it was his second fine, he was assessed one hundred dollars and costs.

MANITOBA

The *Western Manitoba Dental Association* will hold its annual meeting and golf tournament at Clear Lake early in September.

Dental clinics have been arranged in three rural Manitoba communities where there are no local dentists, to take care of children whose parents cannot afford to pay the full fee.

Public health nurses will assist in assembling the children. The clinics are conducted by the Canadian Foundation for Preventive Den-

tistry and arranged by Dr. A. E. Proctor, secretary of the Manitoba branch.

The clinics will be held at Linwood, Dominion City, and McAuley.

DENTAL RELIEF CLINIC RE-ESTABLISHED IN BRANDON

A Dental Relief Clinic has been established in Brandon, Manitoba, opening on the 1st of June. Since the closing of the School Dental Clinic, two years ago, there has been no provision for dental relief of any kind in the city. At that time a general health unit was established in the city with no provision for dental services, and upon the formation of this unit the school board ceased to assume responsibility for dental services to the school children. Several approaches were made to the Board, urging the necessity of continuing the service, but without avail.

The present clinic is established under the joint auspices of the City Council and Brandon Mutual Charities Association, the latter body putting on a monthly mutual in the interests of charity. The Charities Mutual finances the work done for school children, while adult relief is financed through the Council. Two mornings a week are set aside for children, and one morning a week for adults. The work is allotted to the dentists of the city in rotation on a fee basis of \$9.50 per morning of three hours' work. Adult cases are confined to those on relief, the work being confined chiefly to that of an emergent nature. Work for school children is given to all needy cases which have been investigated by the school nurses and referred to a special committee. All necessary restorations in regard to extractions and fillings are taken care of. The Health Unit co-operates in assigning adult cases and in giving the services of the school nurses.

During the month of June fifty-six cases were taken care of, with a total of two hundred and fifty-five operations.

ONTARIO

The Ontario Dental Convention Golf Tournament was held at Weston Golf and Country Club on May 22, 1935.

It was most successful, and we enjoyed the good weather and good fellowship.

The Journal of The Canadian Dental Association

Sixty-five members played and Doctors Paul, Conboy, Kerr, and Martin joined us at dinner.

The following is a list of the winners:

1ST FLIGHT

Low Gross and Mallory Cup—

J. M. Sheldon.

2nd Gross—Joe Boyd, Stratford.

3rd Gross—L. Hipwell.

Low Net—R. S. Wollatt.

2nd Net—W. W. MacDonald.

3rd Net—J. D. Evans.

2ND FLIGHT

Low Gross and O.D.A. Cup—

Russ Bennett.

2nd Gross—L. E. Riddolls.

3rd Gross—J. Dales.

Low Net—H. R. Bateman.

2nd Net—S. A. Milburn.

3rd Net—Harvey Reid.

3RD FLIGHT

Low Gross—W. Clark, Hamilton.

2nd Gross—Windell Holmes.

3rd Gross—D. Leuty.

Low Net—W. F. Dewar.

2nd Net—E. A. Roos.

3rd Net—A. A. Somerville.

Kicker's Handicap—H. Skilling.

R. S. WOLLATT, *Chairman*.

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Mt. Sinai Dental Society. At the closing meeting of the 1934-35 season of the Mt. Sinai Dental Society, elections were held with the following results:

President—Dr. B. Schaffer.

Vice-President—Dr. B. D. Garfield.

Sec.-Treas.—Dr. H. M. Jolley.

Members of the Exec.—Dr. S. Strauss.

Dr. H. C. Zack.

The management of the free clinic of the Society which now operates as a unit of the out patient department of Mt. Sinai Hospital was entrusted to a committee of four, composed of Dr. Saul Simon—Chairman, and representatives to the Medical Advisory Board: Drs. W. Breslin, M. Zimmerman and H. A. Landsberg.

Compulsory Health Insurance for persons with dependents whose salary is below \$2,500 annually, and persons without dependents whose salary is below \$1,200, was recommended by the Ontario Medical Association at its annual convention in Fort William.—*Mail and Empire, Toronto.*

QUEBEC

McGILL UNIVERSITY

Dr. Gerald Franklin, lecturer in Orthodontia, was recently elected to the research committee of the American Society of Orthodontia. *Dr. W. C. Bushell*, lecturer in Crown and Bridge Work, and *Dr. R. E. McMahon*, clinical demonstrator in Exodontia, attended the meeting of the Nova Scotia Dental Association at Pictou Lodge, July 4th to 6th. Dr. Bushell presented a practical demonstration and illustrated lecture on Dr. Bruce Clark's technique for the construction of a porcelain jacket crown. Dr. R. E. McMahon gave a clinic on extraction of teeth. Dr. Bushell received an invitation also from the American Dental Association of Europe and is attending its meeting in London, England, July 31 to August 4. There he is presenting special demonstrations and clinics on Dental Ceramics. Dr. R. E. McMahon and Dr. I. K. Lowry, lecturer in Prosthetic Dentistry, attended the New Brunswick Dental Society Meeting, and co-operated by giving a practical clinic on Immediate Denture Service.

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MONTREAL DENTAL CLUB

The April meeting was devoted to a review of Dr. Bruce Clark's clinic on ceramics. Dr. R. Sellar gave a paper on colour, Dr. W. C. Bushell a lantern slide lecture and demonstration on jacket crown technique, Dr. P. Marchand on the technique of a porcelain crown for a devitalized tooth, and Dr. C. Morris an impression technique for porcelain inlays. At the May meeting Dr. R. E. McMahon demonstrated some very interesting methods for the extraction of teeth. He also gave a practical clinic on a number of patients, on extraction of teeth to conserve the alveolar plate. This was followed by a very interesting discussion.

The last meeting for the season was the Spring Golf Tournament at Mount Bruno Golf

Club on June 21st. Forty-four members were present at this gala event which was followed by a banquet and the presentation of prizes to the following:

Class A: Low Gross—F. W. Saunders.
Low Nett—H. R. Cleveland.

Class B: Low Gross—A. D. Richardson.
Low Nett—Erwin Burbank.

Approaching Competition—A. D. Richardson.

Putting Competition—J. N. Blacklock.

A. D. Richardson and H. R. Cleveland will play off a tie for the low nett Club cup.

■

The closing meeting of the Junior Red Cross Dental Committee for the school year was held on June 6th.

In all, 117 clinics were held, with a staff of four dentists and three dental assistants. Sixteen schools were served:—six in Montreal, four in Westmount, four in Verdun, one in Ville St. Pierre, and one in Lachine. Treatment was completed for 281 children at the low average cost of \$2.56 per child. The work done was mainly preventive, extractions of permanent teeth averaging only three per cent per child.—*From Montreal Star*.

GENERAL NEWS

China's One Dental School. In an article in the *North China Herald*, Dr. Herbert M. Phillips tells how he and his bride set out from Chicago on a world-spanning honeymoon trip, on a work-as-you-go plan. By working as itinerant dentist and self-instructed manicurist, they have travelled the first lap of their adventure. In China they worked in missionary homes, in customs compounds and on boats. Dr. Phillips writes of their visit to Chengtu, and has a great word for the work of the missionaries there. One-fifth of the world's population is said to live in China, and serving these people it is estimated that there are less than one hundred dentists with degrees from recognized schools. This means that there are approximately four million people for each qualified dentist. To make matters worse, almost all the practitioners are in the cities and towns, whilst China's population is ninety per cent rural. But dentistry is rescued from complete oblivion by virtue of the dental school, which is thriving with high standards at Chengtu, a city of almost a million inhabitants near the borders of Tibet. The school is part of the famous West China Union University, which was conceived as the co-operative effort of five Christian denominations in 1910, and from rude beginnings has grown to what is perhaps the largest and best-housed educational enterprise in West China. Dentistry has grown up as an integral part of the institution.—*From the New Outlook, Toronto*.

Effect of Health Insurance Plan on Private Practice. Dr. John T. Hanks, of New York City, dental adviser to the Federal Emergency Relief Commission, speaking before the Mid-winter Meeting of the Chicago Dental Society, said that it would be possible to retain the present relationship between the dentist and his patient under a plan of Health Insurance. It was explained that this could be done by allowing the patient to select his own dentist and pay whatever fee was asked for a service. The patient in turn would be reimbursed by the insurance fund, but only to the amount allowed by the fund for that particular service. Under such a plan the profession would not be regimented nor dictated to in the matter of fees.—*Oral Hygiene, April, 1935*.

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France—According to the *Toronto Globe* of June 28th, many United States physicians and dentists are expected to leave France on account of the threatened insistence that all practitioners must accept French citizenship. This may mean the abandoning of the \$1,000,000 American Hospital.

United States physicians' real objection to the proposed bill is the retroactive principle. They admit the justice of the measure, as twenty-three states in the U. S. have asked citizenship or a declaration of citizenship from foreign practitioners.

EMPIRE NEWS

The Prevalence of Dental Disease. Civilization and a healthy set of teeth seem to have become incompatible. New headquarters of the British Dental Association have been opened by Mr. Geoffrey Hithersay Shakespeare, parliamentary secretary to the Ministry of Health. He said that in the last twenty or thirty years science had recognized the vital connection between dentistry and the health of the nation. An effort was being made to see that the care of the teeth and mouth played its proper part in the life of the individual from the earliest stages. Examinations started in the maternity and child welfare centers and went on to the school medical service. Out of some 3,000,000 children examined last year, 60 per cent were defective in teeth and needed treatment. There was then a bad gap, for the adolescent received no treatment from the state and often failed to obtain any. Then came national health insurance. Since 1921, when dental treatment became an additional benefit, \$100,000,000 had been spent by the lodges in dental treatment. As the financial resources of the country improved, he had no doubt that the dental service would be enlarged. He then opened the Robert Lindsay Library, which is claimed to be as good as any dental library in the world.—*From Foreign Letters—Jour. A.M.A., June 22.*

Gifts to the New B.D.A. Headquarters. Many of those who attended the functions at the opening of the new Headquarters probably had their attention drawn to certain items of the furnishing for which individual donors have to be thanked. The emblazoned coat of arms in the Board Room was the gift of the Chairman, Mr. Northcroft; in the Council Room the fine old English clock on the mantelpiece was presented by the Chairman of the Housing Committee, Mr. Pearce, and the handsome seat for the Chairman by a member who, it is understood, desires to remain anonymous. The statue of Amalthæa, the Cumæan Sibyl, placed at the head of the stairway to the Robert Lindsay Library, was a plaster representation of the intended marble sculpture to be executed by Mr. Bayes later on, and for this the Association is to be indebted to Mr. Northcroft, who also made the arrangements, and other members of the Representative Board. Neither must it be forgotten that the whole of the fittings and appointments of the beautiful Robert Lindsay Library were provided by a fund raised in affectionate remembrance of the late Dental Secretary. It will be generally agreed that these gifts contribute very much to the dignity and attractiveness of the Hill Street premises.—*From the Jour. B.D.A., June 1st.*

IN MEMORIAM

CECIL DAWSON—of Sherbrooke, Quebec, aged 36, died of tuberculosis on June 30. He graduated from University of Montreal in 1923, and since then has practised in Sherbrooke. Doctor Dawson was deeply interested in music, also in civic and military activities. He is survived by his widow, parents and two sisters.

SAMUEL B. GRAHAM — Graduated from Chicago College of Dental Surgeons in 1904. He practised in Moosomin, Saskatchewan, for sixteen years and in Toronto for the past fifteen years. He was a member of the Bloor Street United Church and was active in lodge circles.

GEORGE WILSON KEITH NOBLE—of Toronto, aged 60, died suddenly at his office, 559 Bloor Street West, on July 4th. He had practised in Toronto for more than 30 years. His widow and two sisters survive him.

LOUIS L. VOSPER—of Kingston, aged 50, died on July 5th. He was a graduate of North Western University, Chicago, and also of Toronto University.

JAMES E. ROSS—of Vancouver, B.C. He was born at Darlington, Ontario, and for many years practised in Winnipeg before moving to Vancouver.

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FRACTURES DES MAXILLAIRES

par MASSUE MONAT, B.A., D.D.S., dentiste de l'hôpital St-Luc de Montréal.

LES fractures de maxillaires, devenues, en ce siècle de vitesse et de machines, des accidents fréquents, possèdent certains aspects communs à toutes les fractures, qu'il convient d'abord de considérer brièvement ici.

Etiologie

La cause la plus fréquente de fractures évidemment est un violent choc traumatique. Cependant certaines maladies affectant la structure osseuse de l'organisme, tels le rachitisme, l'ostéomalacie, l'ostéoporose ou certaines conditions pathologiques locales, comme les néoplasmes ou les kystes, peuvent affaiblir le tissu osseux au point qu'il se fracture presque de lui-même. Nous sommes alors en présence de fractures pathologiques.

La mandibule, plus exposée aux traumatismes que le maxillaire supérieur, est, pour cette raison, plus fréquemment fracturée.

Classification

Il y a plusieurs manières de classer les fractures. La plus simple est encore, il nous semble, la meilleure.

Nous avons d'abord les fractures simples ou fermées, dans lesquelles il n'y a aucune communication entre l'os blessé et l'extérieur; et les fractures composées ou ouvertes qui communiquent avec l'extérieur par une déchirure ou fistule. Ces dernières sont assurément les plus susceptibles d'infection.

La plupart des fractures du corps de la mandibule sont composées, i.e. ouvertes à l'infection par une plaie, tandis que les fractures des branches montantes sont généralement simples ou fermées, grâce aux muscles épais adjacents.

Symptômes

A notre première interrogation, le patient nous répond qu'il a été frappé. Huit fois sur dix, toutefois, il est incapable de préciser si sa mâchoire est venue

en contact avec le sabot d'un cheval, le poing d'un homme ou le pare-choc d'un automobile, pour l'excellente raison qu'il était sous l'influence de liqueurs alcooliques au moment de l'accident. Nous n'exagérons pas le pourcentage, car durant la seule année dernière, sur une liste de vingt-cinq cas traités par nous à l'hôpital St-Luc de Montréal, nous relevons dans l'histoire de dix-neuf, que le patient était intoxiqué au moment de la dissociation de l'os.

L'examen du blessé nous révèle une langue épaisse, des lèvres enflées et sèches, une abondante salivation et une odeur fétide. Nous relevons de plus, très souvent, une respiration difficile, une laceration et tuméfaction des tissus adjacents à la partie fracturée, et constatons un crépitement, sensation particulière au toucher, produit par les deux fragments se frottant ensemble. Enfin nous apercevons une décoloration de la peau ou de la membrane muqueuse à mesure que le sang parvient à la surface.

L'interruption de mouvement varie suivant l'endroit de l'os fracturé et il se présente une déformation ou irrégularité de contour du maxillaire suivant la direction du coup reçu, de la ligne de fracture ou encore de la contraction des muscles attachés aux fragments.

Les fractures de mâchoire ne provoquent pas, quoiqu'en disent certains auteurs, de très grandes douleurs lorsque le patient est au repos; mais nous constatons à la pression sur la partie tuméfiée un accroissement de souffrance qui s'aggrave lorsque le blessé parle ou tente d'avaler.

Tout en tenant compte de l'histoire du cas et des symptômes objectifs et subjectifs enregistrés, il est absolument nécessaire de confirmer notre diagnostic

par des radiographies bilatérales du maxillaire. Nous disons bilatérales, parce que nous découvrirons souvent une seconde et même une troisième fractures qui seraient passées inaperçues si nous nous étions limités à un examen radiologique unilatéral. De plus, notre plan de traitement est quelquefois considérablement modifié par la découverte de telles complications additionnelles.

Précautions Préliminaires

Avant d'entreprendre la réduction d'une fracture de mâchoire, il importe d'abord d'extraire toute dent à racine unique dont l'apex se trouve dans le trait de fracture. La raison de ceci est que le tissu osseux environnant l'apex d'une telle dent, très souvent se brise et bientôt se liquéfie; un abcès en résulte, nécessitant une incision externe et un drainage. Le tout nuit donc matériellement et retarde, s'il n'empêche l'union des fragments.

Une anesthésie est rarement nécessaire pour cette extraction, particulièrement si le patient est vu dans les quarante huit heures du temps de l'accident, parce que le nerf dentaire inférieur et ses terminaisons ont été insensibilisés par le choc et que la dent mise en cause offre très peu de résistance.

A moins de raisons urgentes, nécessitant réduction et immobilisation immédiates, il nous semble préférable de remettre l'opération à dix ou douze heures après une extraction de ce genre. Ce repos sera grandement apprécié du patient. De plus, il est suggéré afin de permettre au sang s'écoulant de l'alvéole de se coaguler parfaitement. Nous prescrivons alors un rince-bouche fréquent et une application sur la surface tuméfiée d'une solution d'acétate d'alumine retenue

en place par un bandage Barton: Le liquide fera diminuer l'enflure et le bandage supportera la mâchoire, apportant ainsi réconfort et soulagement à l'accidenté.

Traitement

Le traitement d'une fracture de mâchoire, comme d'ailleurs celui des autres os, consiste: 1°/Dans la réduction des fragments à leur position aussi près de la normale que possible, 2°/Dans l'immobilisation de ces fragments.

Lorsque les dents sont présentes, la restauration normale et parfaite des parties de la mandibule est peut être plus essentielle que celle des autres os, parce que la plus petite déviation de la mâchoire produira une malocclusion des dents, qui gênera le patient pour toujours et nuira à sa bonne mastication. En tout temps, il faut, d'ailleurs, avoir en vue de ne pas détruire l'esthétique naturelle de la face et ceci, on le comprendra, est de première importance dans le cas d'une fracture chez une dame ou un jeune enfant.

Pour immobiliser les fragments d'une fracture de mâchoire, nous avons le choix de plusieurs méthodes, toutes très bonnes, les unes et les autres, mais qui doivent être employées chacune en temps opportun. Voici les principales:

2/ Suture osseuse. Cette technique à laquelle, cependant, on recourt rarement aujourd'hui, consiste à percer des trous dans le corps de la mandibule de chaque côté de la fracture et d'y introduire des fils d'argent que l'on serre fortement ensemble: ces fils ont pour fin de retenir fermement les fragments en position.

2/ Il y a cette manière de retenir les parties fracturées, en ligaturant ensemble plusieurs dents de chaque

côté de la fracture au moyen de fils d'argent, de cuivre ou de laiton. Cette méthode offre, toutefois, plusieurs dangers de complications, et nous conseillons fortement de l'éviter à moins de cas exceptionnels ou en combinaison avec une autre méthode.

3/ Adaptation par le Dr. Léo Winter de New York d'une vieille méthode. Un arc, connu sous le nom de Jelenko et fait d'argent d'Allemagne ou d'or, légèrement malléable et flexible, est ajusté à l'arcade dentaire sur ses faces labiale et buccale, et retenu en position par des ligatures orthodontiques en laiton, passées au collet des dents. Les deux maxillaires sont alors maintenus l'un contre l'autre, en occlusion normale, par des bandes élastiques.

Cette méthode offre plusieurs avantages: Dès la première séance, il est possible de fixer les fragments d'une manière permanente; l'état de l'occlusion est alors sous observation directe en tout temps et les foyers possibles d'infection peuvent être localisés assez facilement. Si, au cours du traitement, il devient nécessaire d'ouvrir la bouche du patient pour une raison ou une autre, il suffit d'un instant pour couper les élastiques. Enfin, occasionnellement, s'il est impossible de réduire complètement une fracture dès la première séance, le choix judicieux de l'angle donné à la direction des bandes élastiques dirigera graduellement, de jour en jour, les fragments vers leur position normale.

4/ La technique la plus simple, cependant, et la plus connue, consiste à ligaturer les dents de la mâchoire, à leur collet, avec des fils de laiton que l'on serre directement à d'autres fils

placés de la même manière autour des dents correspondantes du maxillaire supérieur.

Cette méthode est employée avec succès par le Dr. William Fennelly des hôpitaux Bellevue de New York et Mary Immaculate de Jamaica, L.I. et nous la recommandons spécialement dans les cas de fracture dans la région de la symphyse du menton, lorsque presque toutes les dents sont présentes dans la bouche du patient.

Dans ce genre d'immobilisation, les dents se trouvant dans le voisinage immédiat du trait de fracture, ne doivent pas être ligaturées.

- 5/ Nous avons enfin les appareils de prothèse. Ces appareils sont faits de vulcanite ou de métal, et pour chaque cas individuel: il est donc nécessaire de prendre une impression de l'arcade dentaire et de couler un modèle.

Ces pièces, cimentées ou fixées au maxillaire par des ligatures, sont surtout employées dans les cas de patients complètement ou partiellement édentés.

Anesthésie

Le seul anesthésique général, à date, favorable à la réduction des fractures de mâchoire et à l'immobilisation des fragments est l'avertin dont nous ferons, dans un article subséquent, une étude spéciale.

Dans le cas, toutefois, où nous devons faire usage d'appareils de prothèse, tout autre anesthésique peut être employé.

La réduction et la pose des appareils peut se faire, de plus, sous anesthésie régionale, en allant déposer 2 c.c. de novocaïne aux ganglions de Gasser, par voie exo-buccale.

Conclusions

Nous avons vu qu'il y avait plusieurs

méthodes d'immobilisation. Chacune est excellente lorsqu'employée à sa place; aucune d'elles ne peut servir à tous les cas: Une technique peut être idéale pour un cas de fracture et être contre-indiquée pour le suivant. Quelquefois, nous employons même une combinaison de deux ou plusieurs méthodes pour un même cas aux conditions spéciales.

Il est très important d'instruire le patient sur l'hygiène à donner à sa bouche et de le prier de faire un usage très fréquent, toutes les heures si possible, d'un rince-bouche adéquat. Quand à la diète à prescrire, nous recommandons spécialement l'huile de foie de morue et le calcium Sandoz avant les repas qui se composeront principalement de lait, soupes, oeufs, gruau, gelées et jus de fruit.

Nous aurons une union des fragments dans 5 ou 6 semaines, à moins de complications.

Il est malheureusement impossible, dans un article de ce genre, d'entrer dans tous les détails d'une technique ou d'un traitement concernant les fractures de mâchoire: Le champ est trop vaste. Nous espérons, cependant, avoir été d'une certaine utilité à nos confrères appelés à traiter de tels cas. Nous insistons sur l'importance de prendre plusieurs radiographies avant et durant le traitement des fractures; de ne pas hésiter à sacrifier une dent à racine unique dont l'apex est dans la ligne de fracture et de ne pas devenir l'esclave d'une seule méthode d'immobilisation. Surveillez vos cas attentivement de jour en jour; maintenez la bouche de vos patients dans un état aussi propre que possible et vous obtiendrez, à votre grande satisfaction, des résultats encourageants.

1081, rue St-Denis.

L'ANESTHESIE EN CHIRURGIE DENTAIRE

ERNEST CHARRON, D.D.S., professeur titulaire d'anesthésie et d'exodontie à l'Université de Montréal.

LES personnes qui vont consulter le médecin éprouvent souvent des inquiétudes, mais elles se rendent chez lui avec confiance. Les gens qui se présentent chez le dentiste franchissent le plus souvent son seuil avec appréhension. C'est que l'être humain a une horreur instinctive de la douleur et que, dans le domaine dentaire, il semble qu'elle soit plus vive que partout ailleurs.

L'homme de la rue, comme on dit, serait bien étonné d'apprendre que la douleur est utile, bienfaisante même. Il ne se demande pas ce que c'est que la douleur. Vous n'ignorez pas, vous messieurs, que la douleur est—selon la définition de Gaillard et Nogué — “un phénomène vital comme ceux de la nutrition et de la reproduction, et dont la fonction est la protection de l'individu et de sa descendance”. Tous les médecins savent que la douleur est un symptôme, c'est-à-dire une sentinelle qui veille sur la santé. Le malaise qui amène un malade chez le médecin ou un patient chez le dentiste prévient la plupart du temps les progrès du mal qui en est la cause. Vous n'ignorez pas non plus que le degré de perception de la douleur varie presque à l'infini avec les individus, selon divers éléments, tels que l'âge, le sexe, l'affinement, le climat, etc. Il est cependant des cas où, non seulement pour le bien-être du patient, mais encore pour le succès de l'intervention qui s'impose, l'insensibilisation est indispensable.

De quels moyens disposons-nous?

L'anesthésie peut être générale ou

locale. Cette distinction ne porte cependant que sur l'étendue de l'action anesthésique. En réalité, le phénomène est le même, quand à ses effets, qu'il soit circonscrit à une partie du corps ou qu'il s'étende au corps tout entier. Mais qu'est-ce que c'est que l'anesthésie? C'est la privation générale ou partielle de la faculté de sentir, vous dira votre dictionnaire. J'ai eu l'avantage d'être présenté un jour à deux physiologistes français d'une réputation mondiale. Voulant profiter de cette aubaine, je leur ai posé la question qui me préoccupait depuis longtemps: Qu'est-ce que c'est, au juste, que l'anesthésie? Avec l'humilité qu'on ne trouve que chez le vrai savant, ils m'ont répondu: “Nous ne le savons pas.” Dans notre province, où la nature offre des forces hydrauliques incomparables, l'enfant d'école utilise tous les jours les effets de l'électricité, mais l'ingénieur le plus compétent en ignore la nature. Ce sont pareillement les effets de l'anesthésie que nous observons.

Nous savons toutefois que l'anesthésie provoque dans l'organisme une intoxication momentanée. On peut dire que l'anesthésie détermine un état pathologique. Il est donc évident que l'administration d'un anesthésique doit être entourée des plus grandes précautions. Dans ce domaine comme ailleurs, il peut arriver qu'on se familiarise avec les choses dont on a l'habitude au point d'oublier les dangers qu'elles présentent et de prendre pour acquis que les mêmes causes produiront toujours les mêmes

effets. S'il est des règles générales, il ne faut jamais oublier que chaque cas présente des particularités. Ainsi que le disait un vieux médecin français, il n'y a pas de maladies, il n'y a que des malades. Aucun anesthésique n'est le meilleur dans tous les cas; mais tel ou tel anesthésique est le meilleur dans chaque cas particulier. Il ne faut pas perdre de vue non plus que l'anesthésique est fait pour le patient et non pour l'opérateur. Il ne s'agit donc pas de choisir celui qu'on aime ou qu'on connaît le mieux, mais celui qui convient le mieux, compte tenu des exigences de l'intervention. C'est pourquoi il importe de les connaître tous.

L'anesthésie générale requiert le concours d'un collaborateur compétent. Dans les cas d'anesthésie locale, le dentiste opère seul. Mais on aurait tort de croire que sa tâche est exempte de difficultés et ne demande aucune préparation. Il doit posséder de solides connaissances non seulement en matière de technique et d'asepsie, mais encore en ostéologie, en myologie et en neurologie. Il va sans dire qu'il doit avant tout posséder sa physiologie. Un esprit d'observation sans cesse en éveil lui rendra les plus grands services. Comme il ne lui est pas possible de faire dans chaque cas un examen général, c'est la constatation des symptômes extérieurs, c'est-à-dire la séméiologie, qui lui permettra souvent, dans une certaine mesure du moins, de découvrir chez ses patients quelque état pathologique comportant des contre-indications. Ses observations lui indiqueront donc quel est le mode d'insensibilisation le plus approprié, soit l'anesthésie générale, soit l'anesthésie locale. Ce dernier mode provoque, il est vrai, une intoxication moindre que le premier, mais il n'en faudrait pas conclure qu'on devrait tou-

jours s'y tenir. Si, en chirurgie dentaire, l'anesthésie locale est le plus souvent préférable, il est cependant des circonstances où l'anesthésie générale est seule indiquée.

L'anesthésie générale présente, par exemple, plus d'avantages lorsqu'il s'agit d'enfants ou d'adultes dont l'état psychique exige des ménagements. Vous savez que, chez ces sujets, il ne suffit pas d'obtenir l'insensibilisation, parce que l'élément psychique tient une place des plus importantes. Or l'anesthésie générale annihile l'état psychique. Il arrive aussi que la région où il faudrait pratiquer l'injection est dans un état pathologique tel qu'elle ne serait pas possible, ou bien que la congestion a atteint un degré qui rendrait l'insensibilisation difficile. Enfin, dans certains cas d'une gravité exceptionnelle, l'anesthésie locale ne paraît pas recommandable.

Dans tous les autres cas, nous estimons que l'anesthésie locale ou régionale offre plus d'avantages, tout en comportant moins de risques. Alors que l'anesthésie générale intéresse l'organisme tout entier et provoque des réactions entraînant souvent des complications, l'anesthésie locale n'affecte que la partie à traiter et ses réactions sont d'ordinaire moindres. On aurait tort de croire que l'anesthésie locale ne convient que dans les interventions de courte durée. L'insensibilisation peut être maintenue pendant une heure ou deux et même plus longtemps par l'augmentation de la proportion de l'agent vaso-constricteur. L'anesthésie locale permet d'obtenir un champ opératoire où l'écoulement sanguin est nul ou très faible. Elle présente l'avantage très appréciable de prévenir pendant une période de temps assez prolongée la douleur post-opératoire. Elle favorise les

torces de récupération, parce que l'état général du patient a subi une modification moins profonde et qu'il y a moins d'éléments toxiques à éliminer. Enfin, elle facilite l'intervention en offrant un champ opératoire beaucoup plus accessible et en laissant au patient la possibilité de coopérer avec l'opérateur.

L'anesthésie locale, quels que soient ses avantages, n'est cependant pas sans inconvénients. Vous entendez assez souvent parler des accidents qui en résultent. Mais avant de porter un jugement, n'est-il pas nécessaire de tenir compte des faits et de rechercher les causes véritables des accidents qu'on attribue, sans examen, au mode d'insensibilisation?

Depuis une vingtaine d'années, l'anesthésie locale a fait des progrès considérables. L'emploi de ce mode d'insensibilisation s'étant généralisé, il n'est pas étonnant que les cas d'insuccès soient plus nombreux. D'autant moins que, parmi le grand nombre de ceux qui en font usage, il s'en trouve, comme d'ailleurs dans tous les domaines, qui ne possèdent pas l'expérience nécessaire ou dont la technique est encore imparfaite. D'autre part, on tient l'anesthésie locale responsable d'un grand nombre de complications où elle n'est pour rien. Il arrive, par exemple, qu'un état pathologique continue d'évoluer après la disparition de la cause première, ou que l'intervention — soit insuffisance d'aspésie, soit erreur de technique — ne réussisse pas complètement, ou encore que l'état général du patient diminue ses forces de défense.

Pour prévenir, dans la mesure du possible, les accidents attribuables à l'anesthésie locale elle-même, il faut d'abord connaître à fond sa technique,

et il faut ensuite connaître l'état de son patient. La plupart des ennuis et des accidents imputables à l'opérateur proviennent des causes suivantes:

1.—Injection d'une solution ne possédant pas les qualités requises, c'est-à-dire d'une solution qui n'est pas isotone, ou qui n'est pas à la température normale, ou bien qui ne renferme pas une juste proportion de l'élément vaso-constricteur.

2.—Injection faite trop rapidement, c'est-à-dire à un rythme supérieur à une goutte à la seconde.

3.—Injection mal localisée, soit dans un muscle, soit dans un ligament.

4.—Injection d'une solution en mauvais état de conservation.

5.—Piqûres répétées au même endroit.

6.—Massage excessif.

7.—Injection d'une solution septique, tenant à l'état du liquide lui-même ou à celui des instruments ou à toute autre cause.

Ainsi que nous le disions il y a un instant, il y a des cas où l'anesthésie locale est contre-indiquée ou exige des précautions particulières. Lorsque le dentiste connaît l'état général d'un patient ou bien lorsque celui-ci présente des symptômes extérieurs révélateurs, sa ligne de conduite est toute tracée. Mais il arrive fréquemment que le dentiste ne peut relever que certaines indications qui, sans rien révéler de précis, semblent cependant accuser un état anormal. Dans ces cas-là, le dentiste ne devrait jamais hésiter à consulter le médecin traitant en qui il trouvera toujours un collaborateur dévoué. A plus forte raison devra-t-il communiquer avec le médecin lorsqu'il

sait que son patient est déjà sous ses soins.

La collaboration du médecin et du dentiste est de plus en plus étroite. Nous

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nous en félicitons, parce que c'est pour le plus grand avantage des deux professions et surtout pour le plus grand bien de celui qu'elles servent,—le malade.

ETRANGE CONCLUSION

LE Docteur Ruby L. Cunningham, dans un article publié dans le "Journal of Dental Research", numéro de décembre 1934, (p. 439), donne le résultat d'observations prises sur 11,117 filles de 15 à 19 ans, pour établir l'influence des maladies de la menstruation et des dimensions physiques de la femme sur la carie dentaire.

Il ressort de cette étude que les filles avec prédisposition à la carie dentaire, ne sont pas plus sujettes aux maladies infectieuses de l'enfance que les autres.

La parotidite épidémique et les fièvres scarlatines ne prédisposent pas à la carie dentaire.

Les personnes sujettes aux rhumes, celles qui ont souffert de pneumonie, d'influenza, d'amygdalite, d'otite moyenne, se rencontrent aussi bien parmi les groupes aux dents peu cariées que dans les autres.

La menstruation, l'âge où elle apparaît, la dysménorrhée, l'aménorrhée, la ménorragie paraissent sans influence aucune sur la condition des dents.

L'acné sur la figure, la poitrine ou le dos, le teint de la jeune fille, la présence de ganglions cervicaux palpables, la pression sanguine haute ou basse, la thyroïde normale, légèrement hypertrophiée ou présentant des zones adénomateuses, les amygdales, normales ou pathologiques, tout cela ne paraît influer aucunement sur la carie dentaire.

L'on trouverait cependant des faits qui laisseraient croire que les femmes de haute taille sont plus sujettes à la carie dentaire que celles de petite ou moyenne taille.

L'auteur de l'article conclue ainsi:

Cette étude fortifie le concept qui veut que la carie dentaire soit d'origine buccale et sans relation avec le reste de l'organisme.

Note de la rédaction:

Nous avons cru utile d'attirer l'attention de nos lecteurs sur cet article qui semble conclure à l'encontre de nombreuses expériences récentes.

ECOLE DE PERFECTIONNEMENT

L'Ecole Supérieure Dentaire de perfectionnement vient d'être inaugurée à Paris en présence de nombreuses person-

nalités du monde politique, administratif et médical. Le Docteur Boissier en sera la directeur scientifique.

LUTTE CONTRE LA PRATIQUE ILLEGALE EN FRANCE

EN FRANCE comme chez nous la pratique illégale a pris des proportions alarmantes. A une assemblée de l'Association générale des Etudiants en Chirurgie Dentaire, voici le langage tenu, fort à propos, par un des étudiants :

"Nous savons, dit-il, que la lutte contre la pratique de l'illégal appartient aux syndicats organisés. Nous savons que de sérieux efforts ont été faits par ces derniers pour la combattre et essayer de l'anéantir.—Mais croyez-vous que les futurs praticiens n'ont pas, eux aussi, leur part de responsabilité dans la lutte? Croyez-vous que ceux qui, demain, seront les principales victimes d'une scandaleuse pratique qui se développe impunément en France n'aient pas le droit à la parole?"

Il devient évident que l'autorité des corps professionnels s'est effritée un peu partout. Dans la province de Québec,

la pratique illégale se généralise dans des proportions inquiétantes. La preuve contre les délinquants paraît trop difficile à établir, et les frais se chiffrent trop souvent à des sommes démesurément élevées. Notre profession ne devrait pas à avoir à établir une preuve lorsqu'un technicien est surpris en possession de toute l'instrumentation nécessaire à la pratique illégale. Ce simple fait devrait suffire à condamner un mécanicien-dentiste, à moins que l'accusé n'établisse clairement son innocence.

N'oublions pas que tout individu habitué à gagner sa vie par l'exercice illégale d'une profession rompt rarement, d'une façon complète, avec son habitude. Il devient un récidiviste prudent et sagace, ce qui le rend difficile à dépister. Il est donc urgent d'activer la lutte afin de décourager les vieux du métier, et d'empêcher les jeunes techniciens de suivre le mauvais exemple de leurs aînés

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TO MY FRIEND



*Though I so seldom see you
It's a joy to know you're there!
The thrill of your courage helps me
The burden of life to bear,
Your strong faith lifts me sunward
Above the cloud of my care,
The thought of your faithful friendship
Can make my day more fair.
It's a comfort just to know you
And to know that you are there!*

—Annie Johnson Flint.



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Special lecturer, Prosthetic Department, McGill University.

Dr. Bourke will preside at the Annual Fall Clinic
of the Montreal Dental Club, October 17th to 19th.



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THE PRESENT-DAY APPROACH TO THE ORTHODONTIC PROBLEM*

By G. VERNON FISK, D.D.S., Toronto, Ontario.

THE approach to any complex problem such as is presented in the study of diseases and deformations of the human organism must necessarily include a consideration of the causative factors responsible for such deformations, a classification of these various factors and an appraisal of their significance before any attempt at treatment is made. Owing to its composite nature, the orthodontic problem is no exception.

In today's presentation of the subject, consideration of a highly approved method of appraisal of the physical status of the patient will be given. This, in turn, will include a recognition of possible factors detrimental to normal growth and development. Special attention will then be given to defects evidenced by a three-plane study of the dento-facial areas. Having dealt with these general conditions, some observations will then be made upon the dental areas.

One of the first problems that confronts us in undertaking any case, is whether it is advisable to commence immediate treatment. To answer this, one of the first steps is to appraise the physical status of the patient. For this, there appear to be three yardsticks, namely, health, growth and development.

Upon the basis of health alone, some patients should be advised to defer orthodontic treatment; others may be similarly advised upon the basis of marked retardation of growth or development. An investigation of the previous health record of the patient will assist greatly in estimating growth and development. The exanthemata such as scarlet fever, measles, whooping-cough and mumps temporarily inhibit areas of active metabolic change. Rickets, scurvy and summer diarrhoea also have an effect upon the skeleton from which it recovers however. Dietary changes in infancy influence skeletal growth. Respiratory diseases, however, appear to accelerate development. A few diseases like infantile paralysis do not impede development, but only growth. The case history, therefore, may be of particular significance in estimating the effect that various diseases may have upon the growth and development of the individual.

As you know, there should be definite growth stages evidenced at certain ages. In cases where these have not been attained, one has an indication that immediate treatment may not be advisable. Your experience, and mine also, no doubt has included cases, which, during a period

*Read before the New York Society of Orthodontists at New York Nov. 20, 1933, and published by permission and courtesy of that Society.—Editor.



FIGURE 1

Shows the roentgenogram of the hand of a girl six and one half years of age whose development appears to be retarded about two years.

of observation, have shown a natural improvement. This improvement is due probably to the patient experiencing a period of normal body growth.

As an approximate guide to the skeletal age of patients under twelve years of age, clinical evidence such as e.g., the time when the child first walked, the age when the first tooth erupted, may be used. In the case of the older patient, such additional information as the age at which the deciduous teeth were shed is also helpful. On the other hand, irrespective of the chronological age, one of the simplest but at the same time one of several reliable determinations of the skeletal age of a patient may be obtained by making a roentgenogram of the hand. Such a picture is evidence of the stage of development and growth of the individual. This information is of great assistance in determining the correct time for the commencement of ortho-

dontic treatment, e.g., a six-year-old child chronologically (Fig. 1) may be only four years old developmentally as shown by the roentgenogram of the hand. Subsequent roentgenograms may reveal that growth is active, and it is during this period of normal growth that the optimal results may be obtained by orthodontic treatment.

It is extremely interesting to note the marked differences of skeletal age revealed in patients of the same chronological age. These differences are not less marked, however, than those of height and weight of patients of the same age. In many cases this appraisal may not be significant, but where there are abnormal conditions such as retarded growth, unusual height and weight, the information provided may prove invaluable as it may show up the extreme cases which are not now recognized. The diagnosis, then, includes all phases of the case history.

Apart from all clinical difficulties, every experienced orthodontist has had to face the problem of arranging a suitable time for appointments with some children, even in the afternoons. The after-school routine for many children is similar to the following:

- Monday—Dancing.
- Tuesday—Swimming.
- Wednesday—Music.
- Thursday—Riding.
- Friday—Art.

Other interests such as skating, hockey, basketball and rugby also share in the daily program of many older boys and girls. While some of these activities are undoubtedly beneficial, there should be proper time for rest. It is little wonder that nervous reactions are noted and that some children become anaemic and break under the load. The orthodontist who

does not wish such a break to occur during treatment and so reflect upon himself or upon the science of orthodontia, will, before the commencement of orthodontic treatment, advise a judicious curtailment of the child's activities to a degree that is consistent with the temperament and physical endurance of the child. Nevertheless, the timid and lethargic patient should be encouraged to take moderate exercise as an aid in stimulating self-confidence and in promoting body growth. Further investigation of such cases may reveal that orthodontic treatment may be advantageously rendered only after co-operation with competent medical service. What co-operation may we seek from the medical service?

CALCIUM-METABOLISM

Zones of demineralization shown in roentgenograms whether these appear as areas of greater radiolucency in the bone, absorption of the roots of the teeth, or as dental caries may be of particular significance. As has been shown by Mac Kevitt (1), these may indicate the withdrawal of the calcium from the skeletal tissues of the body. It is of great importance that any imbalance in the calcium-phosphorus ratio be corrected.

About 99 per cent. of the total calcium in the body is in the skeletal tissue. Eighty-five per cent. of this bony structure is a combination of calcium and phosphorus. Since most body calcium is in combination with phosphorus, it is easy to understand how an adequate supply of phosphorus may be essential to the utilization of calcium. But it is also important that an adequate supply of the fixator of the calcium, namely vitamin D., be provided.

Henry Klein and E. V. McCollum (2)

reported that dental caries developed when the blood phosphorus fell below a critical level; (about 10 milligram of phosphorus per 100 c.c. of serum). In animals whose blood phosphorus was above that level, caries did not develop. Karshan, Krasnow and Krejci (3) found that the main difference between persons immune to dental caries and those susceptible to this condition was in the phosphorus content of the saliva, the phosphorus content being distinctly higher in persons free from caries. Agnew, Agnew and Tisdall (4) confirmed the necessity for an adequate phosphorus intake in the rat and extended their observations to the dietetic management of 350 children, concluding that adequate supplies of phosphorus and vitamin D are essential to sound teeth.

Deficiencies in the diet may be one causative factor of such a condition. Others may be abnormal excretion and actual removal of calcium from the skeletal reservoir through excessive glandular activity of the parathyroid glands or excessive doses of vitamin D. Again, the supply of calcium in the diet may be adequate but there may be an inadequate supply of vitamin D, resulting in an excretion of the unutilized calcium. Skilled medical assistance is necessary in such cases.

GLANDS OF INTERNAL SECRETION

The knowledge concerning these interesting regulators of growth, development and metabolism of the body is very meagre as yet. Still, from the research work that has been done, indications are that interesting developments may be expected from this fascinating field. Some glandular disturbances seem to be in the light of present knowledge of

special interest to orthodontists.

Thyroid—According to Brash (5): "After the removal of the thyroid, the long bones are stunted in their growth and the growth of the skull including the facial skeleton may be profoundly affected. The development and growth of the teeth is also interfered with and associated with the lack of proper growth of the alveolar processes there is irregularity and delayed eruption of the teeth and consequent interference with the development of correct occlusion." On the other hand, some cases of distocclusion which do not respond to the usual methods of treatment, may upon careful investigation reveal the fact that the mother has suffered from hypothyroidism. Upon further observation it is often found that the mother also had a similar malocclusion of her teeth. The literature states that the malocclusion is caused by a glandular deficiency, but experimental evidence shows today that conditions once supposed to be of purely endocrine origin are more specifically an expression of genetic constitution.

Posture: The presence of a postural defect in a child having malocclusion may also be manifestation of some deeper cause; as already indicated, but it has been observed (6) "that posture has some effect upon the second period of the development of the jaws and that it is possibly wise to treat all cases of deformities of posture in cases of deformity of the jaws." In searching for the cause of the posture it may be found to be in the cervical vertebrae or in the lumbar vertebrae or even a late development of the musculature of the chest. Muscle training of the facial muscles are a valuable aid in orthodontic treatment. However, exercises designed to correct

facial musculature assume a place of secondary importance if the postural defect is not corrected.

THE DENTO-FACIAL AREA

The relationship of the position of the teeth and jaws to the skull has been studied by various men. Van Loon's early investigations in this phase of orthodontic diagnosis in Europe have been modified by such men as Dreyfus, Schwarz, Keith, Izard and Simon. In America, Todd, Hellman, Lewis, Dewey, Broadbent, Lischer and others have made noteworthy contributions to this phase of research.

The methods of diagnosis advocated by Simon (7) have undoubtedly received the greatest recognition in America. (Fig. 2). As Stanton (8) has pointed out, however, the fact that both points selected for establishment of the horizontal plane depend upon the judgment of the operator, the possibility of error is great. Further, it can be readily demonstrated that there is a great variation in the depth of soft tissues in different individuals which may also be a source of error. The roentgenographic technique used by Broadbent (9) for the study of the relationship of the teeth to the skull provides a registration of the hard tissues upon the roentgenogram and appears to be the most accurate yet devised. It presents possibilities for modification and simplification which render it applicable to the usual type of dental roentgen-ray equipment.

ROENTGENOGRAPHIC TECHNIQUE

The simplified technique for making lateral and antero-posterior registrations of the skull may be described as follows:

The head rest is removed from the

dental chair and in its place is mounted a specially designed head-holder bearing two metal parallel rods for insertion into the external auditory meati. The tips of the metal rods rest in the same horizontal plane and permit lateral adjustment to accommodate different widths of heads. A sighting arrangement facilitates the setting of the roentgen-ray tube so that the central ray passes through the tips of the ear posts, and at the same time ensures that the target of the tube is always set the same distance from the sagittal plane.

Attached to the head-holder are two vertical frames, for the reception of the cassettes, one parallel to the sagittal plane of the patient's head when placed in the head-holder and the other at right angles to it. By adjusting the head-holder so that the centre of the head is in the same axis as the centre of the pedestal of the chair, the lateral roentgenogram may be taken and the chair rotated through a 90° angle and the antero-posterior exposure made. With a standardized distance of five feet from the anode to the sagittal plane and a uniform distance of six inches from the sagittal plane to the film,

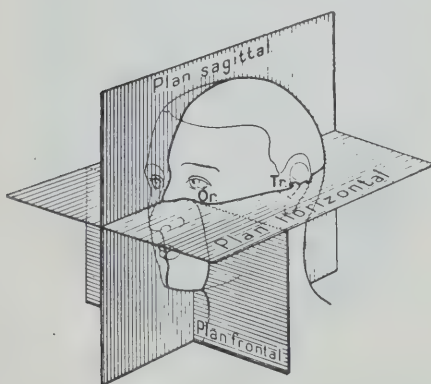


FIGURE 2

The three cranial planes used by Simon to determine the relationship of the teeth to the cranium (after Schwarz)



FIGURE 3

The profile roentgenogram of the cranium of a treated orthodontic case.

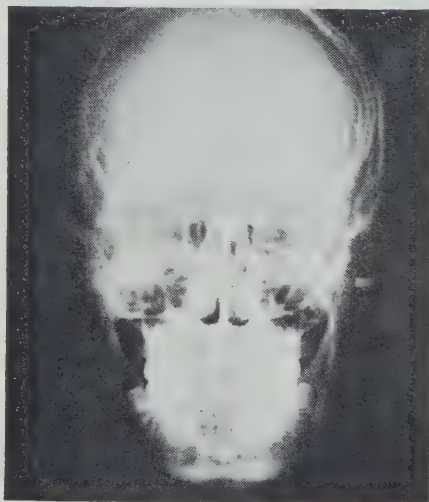


FIGURE 4

An antero-posterior roentgenogram.

comparative studies of the growth of the facial bones and teeth may be made even though these distances provide a slight enlargement of the image upon the roentgenogram.

The cranium has its greatest increase in

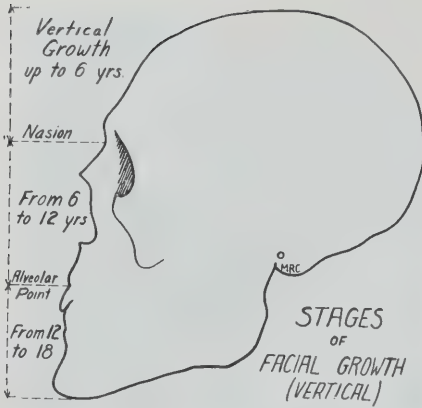


FIGURE 5
Stages of facial growth (vertical)

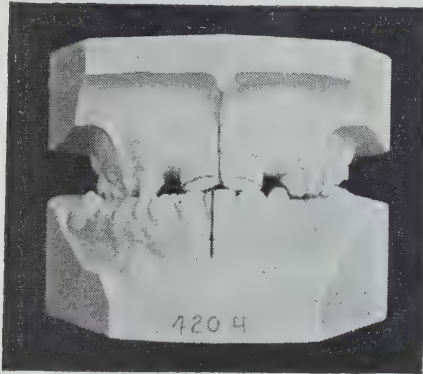


FIGURE 6
Illustrates the casts of a girl 9 years of age.

size before the child has reached the age of six years. Between the ages of six and twelve years, vertical growth in the naso-maxillary area should occur. After the twelfth year growth is active in the mandible.

If we are to be of greatest service in directing growth, stimulation should be applied in the required area at the time growth is most active. Tardy growth in the maxillary areas should, therefore, receive orthodontic assistance during the second growth stage or about the twelfth skeletal year.

It is not to be inferred that the profile

roentgenograms are used as a yardstick for every case and that each and every

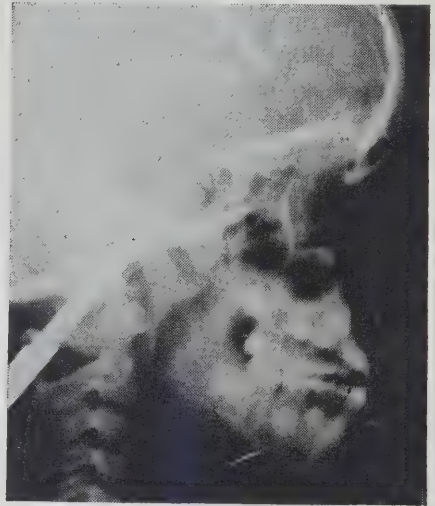


FIGURE 7
The Profile roentgenogram of the same case as shown in Fig. 6. (Note the lack of forward growth in the naso-maxillary area, also the forward position of the left ramus due to the displacement of the mandible to the right.

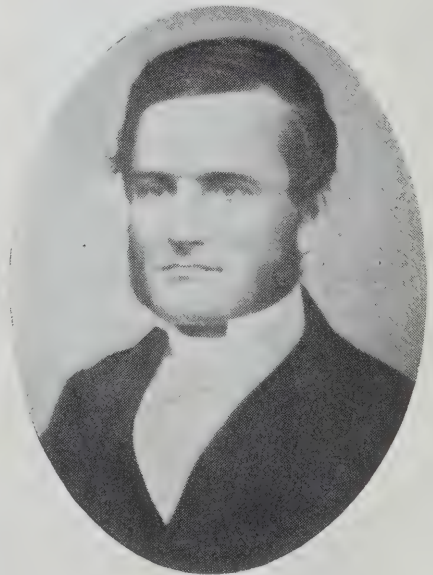


FIGURE 8
Illustrates the portrait of the great grandfather of the young lady whose roentgenogram is shown in Fig. 7, the nearest relative to exhibit any symptoms of a similar condition.

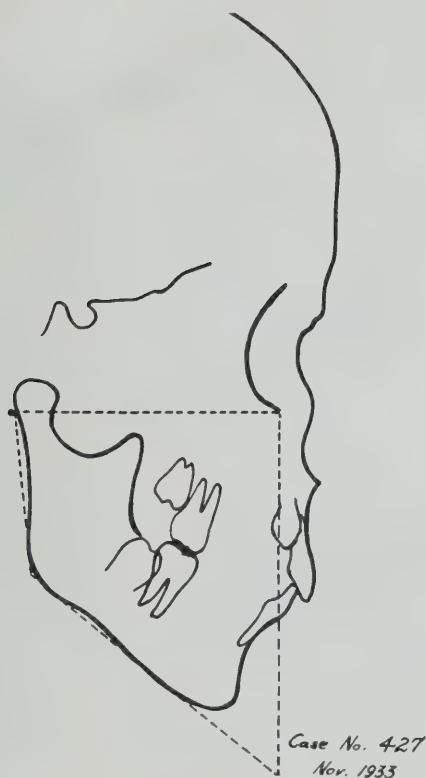


FIGURE 9

Illustrates a tracing from the Profile roentgenogram of a boy ten years of age showing marked lack of mandibular forward growth.

case must conform to "Simon's Law of the Canine." (7) Nevertheless, they are a reliable index to the relations of the teeth and jaws to the cranium and give more positive information in this regard than do even gnathostatic photographs or cephalametric measurements. Moreover, comparative studies of growth in the dento-facial area may be made by superimposing tracings taken from the roentgenograms. Fig. 9.

Many cases of excessive overbite show the maximum response if treatment to correct the overbite is delayed until after the eruption of the second permanent molars. Figs. 10 and 11 show comparative growth changes in the facial area

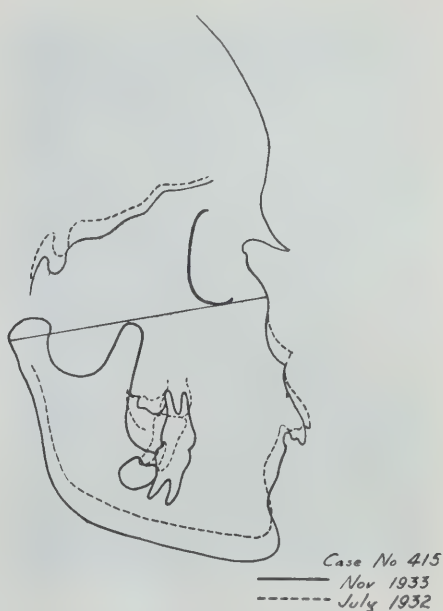


FIGURE 10

One illustration showing the comparative growth changes in the facial area of a boy in sixteen months' treatment with maxillary and mandibular labial appliances and a maxillary lingual bite-plate during the third stage of facial growth.

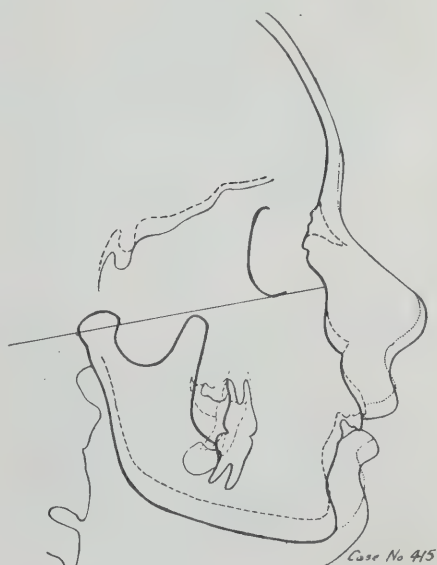


FIGURE 11

A further illustration of the treatment as outlined in Fig. 10.

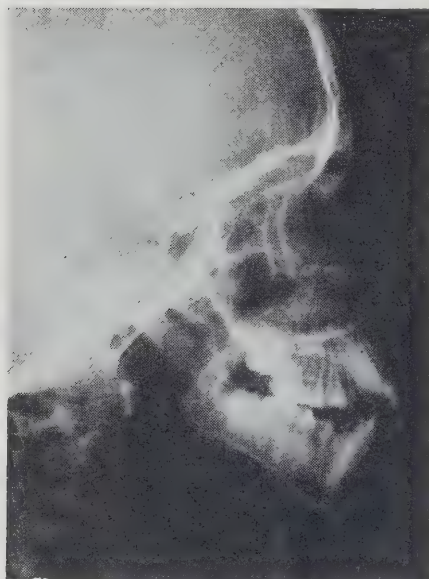


FIGURE 12

Shows the profile roentgenogram of a boy ten years of age. The child suffered from infantile paralysis when five years old. (Note the lack of vertical growth in the mandible).

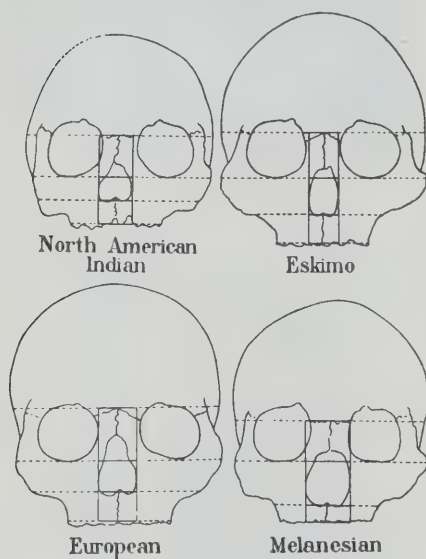


FIGURE 13

Illustrates the racial variation in the Orbito-naso-alveolar area (after Cameron).

of a boy in sixteen months' treatment with maxillary and mandibular labial

appliances and a maxillary lingual bite-plate during the third stage of facial growth. The soft tissue comparisons may not have much significance during treatment; for if the normal relationship of the bony structure of the face is established, the orthodontist does not need to be concerned with the facial appearance, as this will be automatically cared for.

Abnormal variations in bone will also be detected by these roentgenograms. Fig. 12 shows the profile roentgenogram of a boy ten years of age. The child suffered from infantile paralysis when five years old. (Note the lack of vertical growth in the mandible and the turning upward in the anterior region of the compact bone forming the roof of the mouth. Compare with Fig. 3. It is difficult to maintain the maxillary incisors after retraction in many cases showing this upward inclination, sometimes necessitat-

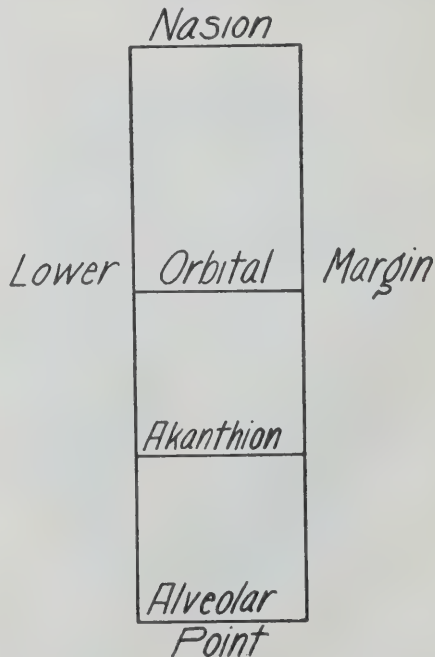


FIGURE 14

The Cameron rectangle.

ing secondary treatment. Deflections of the nasal septum are readily detected in the antero-posterior roentgenogram (Fig. 4) and growth changes in the naso-alveolar area may be studied by superimposing upon it subsequent registrations.

RACIAL INDEX

In 1920 Cameron described a racial variation in the naso-orbito-alveolar area. (Fig. 13). To determine such variation, measurements on skulls are made by means of an indexometer which he devised, or by drawing rectangles upon carefully made photographs of the skulls. The top of the rectangle passes through the nasion, the bottom is the maxillary alveolar point. The width of the rectangle is governed by the nasal aperture. Two lines cross the rectangle, one at the lower border of the orbit and the other at the akanthion. The relationship of the smaller rectangles to the whole gives an index to the racial characteristics. (Fig. 14).

This method of race determination is equally adaptable to the roentgenographic technique as shown in the sketch in Fig. 15.

Such a method offers interesting possibilities in determining the predominating racial characteristics of our patients. This may be of particular value in the study of such a heterogeneous mixture of race as is found in the United States of America.

THE MARKING AND TRIMMING OF CASTS

But the antero-posterior roentgenogram serves another useful purpose. The metal ear-posts of the head-holder are registered upon the roentgenogram. In a symmetrical head, a line drawn through the nasion at right angles to a line drawn through the centre of the ear-posts

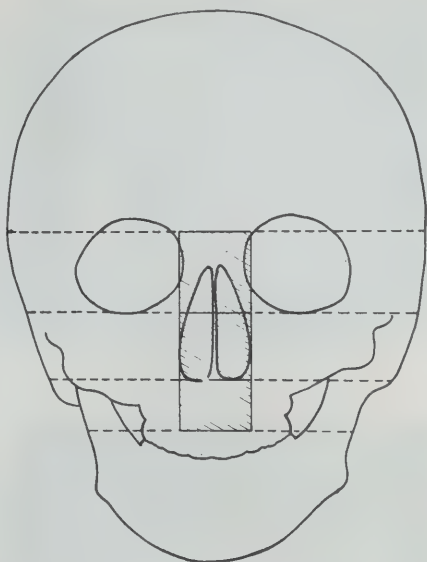


FIGURE 15

The Cameron rectangle (the shaded area) drawn upon a tracing from an antero-posterior roentgenogram to estimate the predominant racial characteristics.

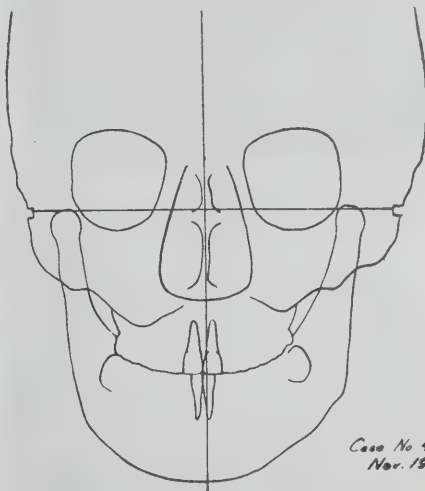


FIGURE 16

The sagittal plane marked upon a tracing from an antero-posterior roentgenogram, which having been taken through the back of the cranium indicates that the incisors are displaced to the left.

should be in the sagittal plane. (Fig. 16).

A short part of this sagittal plane may be recorded upon the labial surface of the

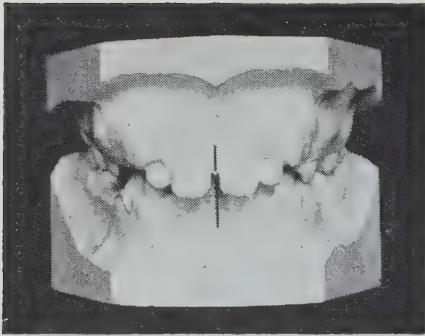


FIGURE 17
Centre of maxillary and mandibular incisors in the same plane as the sagittal plane.

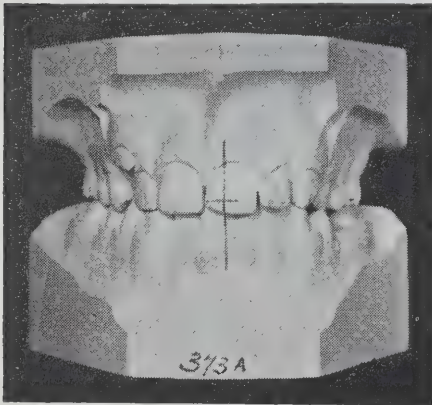


FIGURE 18
Lateral displacement of maxillary incisors to right of sagittal plane.

casts where it passes through the maxillary incisors and is of assistance in the diagnosis of the case as well as in the trimming of the casts. Before the vertical line is placed upon the mandibular incisors, the patient is examined to determine if there is a lateral displacement of the mandible. The line is marked upon the mandibular incisors after the mandible is centred. If the marking upon the mandibular incisors falls between the centrals immediately below the mark upon the maxillary incisors, it is an indication that no mandibular displacement is detected. If, however, the vertical line

upon the mandibular cast falls to one side of that upon the maxillary cast, the attention of the operator is drawn to a displacement of the mandible each time the casts are examined.

Some of the conditions indicated by the marking of the sagittal plane upon the labial surface of the casts are:

- (a) Centre of maxillary and mandibular incisors in the same plane as the sagittal plane. Fig. 17.
- (b) Lateral displacement of maxillary incisors to one side of sagittal plane. Fig. 18.

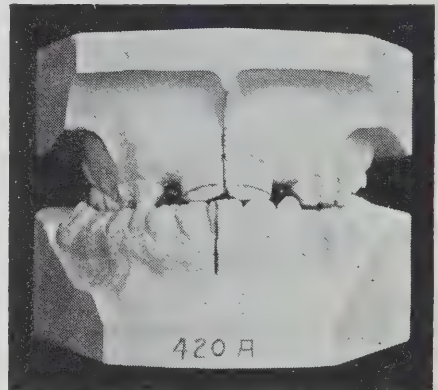


FIGURE 19
Lateral displacement of mandibular incisors to right of sagittal plane. The mandible is also displaced to right.

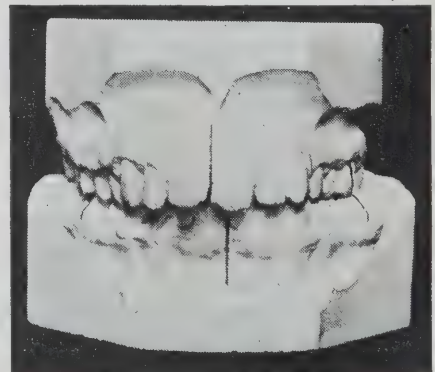


FIGURE 20
Lateral displacement of mandible to left.

The Present-Day Approach to the Orthodontic Problem

- (c) Lateral displacement of mandibular incisors to one side of sagittal plane. Fig. 19.
- (d) Lateral displacement of mandible to one side. Fig. 20.
- (e) Various combinations of above.

Another important registration which increases the diagnostic value of the casts is the marking of the median raphe upon the casts. After the posterior border of the maxillary cast is trimmed at right angles to the median raphe, it may be transferred to the mandibular cast. The marking of such a line makes it easier to diagnose variations from the normal arch form. Such variations may be displacement of an individual tooth or a group of teeth buccally or lingually and may be unilateral or bilateral.

The unilateral buccal displacement of the maxillary right first bicuspid is illustrated in Fig. 21. The unilateral lingual displacement of a maxillary left molar is shown in Fig. 22, while the posterior displacement of the maxillary right canine and the bilateral lingual displacement of the maxillary canines, bicuspid, and molars is shown in Fig. 23.

The trimming of the posterior border of casts at right angles to the median raphe also shows antero-posterior displacements of the teeth. Of course, such displacements may be measured from the centre marking upon the anterior surface, but when the cast is trimmed at right angles to the median raphe, a measurement taken from the posterior border of the cast at points equidistant and parallel to the median raphe, is more accurate. All measurements may be recorded upon the casts by means of simple symbols.

If the marking upon the anterior surface of the mandibular incisors falls directly below that upon the maxillary

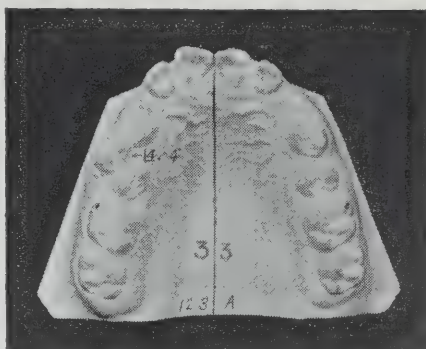


FIGURE 21

The unilateral buccal displacement of the maxillary right first bicuspid.

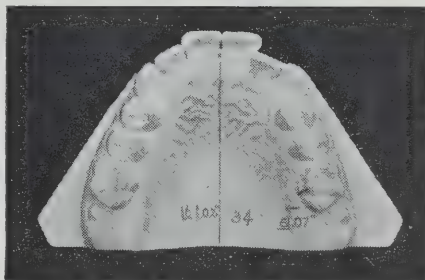


FIGURE 22

The unilateral lingual displacement of a maxillary left molar.

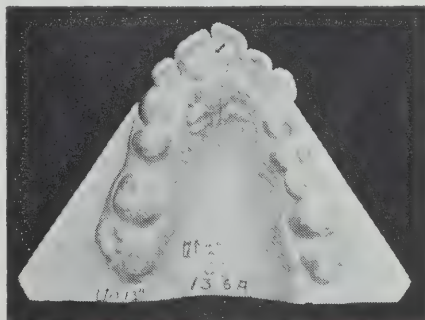


FIGURE 23

Posterior displacement of the maxillary right canine and the bilateral lingual displacement of the maxillary canines, bicuspid, and molars.

incisors, the centre line may be placed upon the mandibular cast by projecting the median raphe upon the posterior border of the maxillary cast and then

with a square, producing the line until it cuts the posterior border of the mandibular cast.

When the mandible is displaced laterally, however, the line upon the posterior border of the mandibular cast is placed to the side opposite the displacement, an amount equal to the displacement. A line joining the marking upon the posterior border and that upon the anterior surface is the centre line of mandible. Photographs accurately taken to scale, of the occlusal surfaces of the maxillary and mandibular casts upon which the median line is drawn, make a useful record from which measurements of the various displacements of the teeth may be made.

The mounting of casts of the teeth upon a suitable articulator permits a more accurate study of the occlusal relations of difficult cases of malocclusion particularly from the lingual aspect during lateral and protrusive movements similar to those made by the mandible during the function of mastication. Such a study includes a careful consideration of the relationship of the overbite to overjet, an overbite greater than 2 m.m. being usually excessive without a compensating overjet. It may, therefore, be detrimental to plan to retract the maxillary incisors until the lingual surfaces make contact with the labial surfaces of the mandibular incisors, unless the overbite be proportionately reduced. (11).

SUMMARY

In this paper it has been pointed out that the present-day approach to the orthodontic problem includes as a basis for diagnosis, preparatory to treatment, a detailed case study. Such a case study should commence with an appraisal of the physical status of the patient. This

appraisal is concerned with three factors, namely, health, growth and development. Treatment upon some cases of malocclusion of the teeth will be deferred upon the basis of the health of the individual alone; while in others, factors considered unfavourable to growth and development will be further studied and treated with the co-operation of skilled medical assistance. For an appraisal of the development of the individual, the roentgenogram of the hand is considered helpful. Before the treatment of a case of malocclusion of the teeth, a three-plane study of the dento-facial area has been advised. For such a study, a simplified roentgenographic technique has been presented. This technique requires an antero-posterior as well as a profile roentgenogram of the skull and is a valuable record for a comparative study of the growth changes in the dento-facial area. Calculations of the sagittal plane are made from registrations of the bones of the skull upon the roentgenogram as has been described. When the sagittal plane and other markings are placed upon the casts of the teeth they constitute useful information for diagnosis and for the trimming of the casts. Finally, it has been pointed out that the mounting of the casts on an articulator offers advantages for study of difficult cases of malocclusion.

DISCUSSION

DR. CHARLES A. SPAHN (Newark, N.J.): I should like to ask a question in regard to Dr. Fisk's last statement on the mounting of the cases on a compound articulator. I wonder what percentage of his cases he mounts on the articulator for measuring purposes before treatment is begun and before diagnosis is made.

DR. HOWES: I understood how Dr. Fisk got his anterior point for transferring the point to the upper model, but I didn't understand how

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he got the two posterior points to draw that raphe on the model.

DR. SIDNEY E. RIESNER (New York City): I am very much interested, of course, in the presentation of a technique including a subject quite close to my heart, the roentgenogram. I should like to ask Dr. Fisk what allowance he makes for the five per cent distortion on a plate when it is held six inches away from the plane. Inasmuch as this is one of the most important points of the diagnostic system presented today, using that sagittal plane, median plane, for lateral shifts of the maxilla or mandible, what accommodation is made for that slight distortion or enlargement that he does recognize and the peculiar excellence of those roentgenograms—part of the technique as was presented, it will be of interest to the members to know was taken with a 10 milli-ampere machine. They will be interested in knowing his technique. I am offering this as additional stimulus for discussion of a very excellent paper which I am sure we appreciated.

DR. OSCAR JACOBSEN: I should like to ask Dr. Fisk about analyzing these cases where the frontal pictures in the radiograph show the skull and he finds the median line of one or both dentures is dislocated. Occasionally you will find one or both dentures displaced. Is any attempt made to correct that, any attempt to correct between both dentures toward the median line and bring it into exact symmetry with the rest of the skull?

DR. FISK: Replying to Dr. Spahn, I have had possibly five or six cases that I can recall that I have mounted for study in the way indicated. I hope the members will not take that percentage as an indication of my not recognizing it as a valuable procedure. I feel that I should do more. I mention it because I do feel that it is an excellent method of study of cases particularly from the lingual aspect during the various mandibular movements.

In answer to Dr. Howes' question, in marking the median raphe on the palatal surface of the maxillary cast, the raphe so often bifurcates toward the posterior. We try to take the midpoint of the bifurcation, or where there is a definite ridge, the middle of the ridge, not having a better method at the present time. I am given to understand that that is a fairly reliable point. Dr. Waldron can correct me if I am wrong.

Replying to Dr. Riesner's question regarding distortion, we do have about 5 per cent distortion or enlargement of the image of the cranium on the roentgenogram, but if all pictures are taken in a standardized way, that enlargement is the same in all of them and for purposes of comparison they are the same.

My interest in this roentgenographic technique was stimulated by the presentation of Dr. Dewey and Dr. Riesner at the American Society meeting in Chicago some years ago, following which I wrote Dr. Riesner and he helped me very materially in the development technique of my radiograms. I was unable to get the results I wanted and with his help I was stimulated further.

Regarding the 10 milli-ampere machine, we do have to give a longer exposure, as you can readily understand, but I have recently secured a tube of German manufacture which together with a cassette fitted with double intensifying screens, cuts down the exposure time with clearer definition and also greater possibility of the soft tissue and hard tissue registration on the one film.

Dr. Jacobsen asked with reference to case analysis, whether we compromise when both the mid lines of the maxillary and mandibular teeth do not appear to coincide with the sagittal plane. Again, I will say that I do compromise; however, if the cast also shows that there is an antero-posterior displacement on one side more than the other, that is, the buccal teeth on one side are either anteriorly or posteriorly more than on the other side, I do endeavour to get the buccal teeth, molars and premolars, similarly placed.

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Medical Arts Building.

CANCER FROM THE DENTAL STANDPOINT*

By H. J. MERKELEY, M.D.S., Winnipeg, Manitoba.

PROBABLY the most effective attack that can be made today on neoplasms of the oral tissues, and one that will remain the most important until their aetiology is better understood, is a concentration upon early diagnosis.

With most of our profession cognizant of, and the dental students now being taught the newer concepts of pathology, physiology, and histology, the oral surgeon can well look to a new source for assistance in coping with the dreadful scourge of cancer, and not only will he receive this, but he can expect more attention to be paid by the dentists, to the placing of non-irritating dental restorations and the elimination of all rough or sharp corners even on the natural teeth.

Now that most dentists have adopted the plan of recalling their patients at least every six months, we find the opportunities greatly increased for the careful operator to keep a close check upon any abnormalities or pathological indications, and I believe a great step forward can and will be made when the dentist is impressed with the necessity for surveying the soft tissues of the mouth as well as the masticatory apparatus. He should be taught to look with suspicion upon every peculiarity and change in the character of the mucous membrane in his field, and also to note the condition of the saliva, as to quantity, viscosity, etc., being prepared on the slightest provocation to refer the patient to a physician for further inves-

*Read before the Winnipeg Medical Association.

tigation; and only thus can he discharge properly his duty in the light of our present-day knowledge.

LEUCOPLAKIA

It is, I take it, not in the province of this paper to discuss exhaustively the characteristics of the many different malignant lesions found in our field, nor even to consider differential diagnosis, for that has been well done already by those who are much more competent. I cannot refrain, however, from a brief reference to three or four common precursors of cancer, chief of which is leucoplakia.

This is a definite change in the mucous membrane; and the more keratosed the surface, the more likely it will be to suddenly take on malignancy. The dentist must refrain from extracting, as well as from all other extensive work in that region, in these advanced cases, since even a stretching of the tissue of the cheek for the preparation of a large restoration will frequently light up a quiescent area. The use of silver nitrate (or, indeed, any other cauterant) cannot be condemned too strongly; nor should alcoholic mouth-washes be used, salines being much preferred. It has been my lot in three cases to call the patient's attention to a leucoplakia that later terminated in a cancer. In one case I refused to extract, and then saw another do so and light up an area that rapidly developed into an unquenchable malignancy that ran its course rapidly. In this case I called the patient's attention to spots and advised him to see his physician. He refused to do so, saying he was too busy just then, and jokingly added, "Never trouble trouble till trouble troubles you!" The result was that this cancer ran its fatal course in less than a year. In another case the leuco-



plakia was shown the patient and she was advised to see her physician at once; in fact I refused to do the dental work required until she had. One of our nose and throat men saw her and explained the seriousness of the condition. This was in March, but no treatment was sought until pain was noted in September, when she took radium treatment at Johns Hopkins. In the following March a local physician asked me to go to her home and extract the lower bicuspid to ease the pain, but an examination revealed the involvement of the whole left mandible and neck, with five or six fistulous openings which poured forth their contents when an irrigation was attempted. Death ensued in three or four days. Both cases exhibited an advanced type of leucoplakia, and both were heavy smokers. These cases are quoted to show the necessity for an early diagnosis.

OTHER PRE-CANCEROUS LESIONS

Possibly the next most frequent precancerous lesion seen by the dentist is the

ulcer at the vermillion border of the lip. This is noticed readily and should be kept under close observation. If it refuses to clear up readily, the case should be referred for further investigation. Sometimes early treatment is delayed and anti-syphilitic treatment instituted by the physician because the patient has a positive Wasserman, but it is well to remember that these cases are very susceptible to carcinoma also, and precious time must not be lost.

The hypertrophy so frequently seen during pregnancy is a typical tumour, usually benign, often subsiding and then recurring with each successive pregnancy.

The small pedunculated fibroma so very frequently seen, is also dealt with easily, seldom recurring when the interdental bony septum, with the two approximating teeth and their periosteum, is removed.

The tongue often exhibits leucoplakia papilloma, etc., and due to its mobility and use is very susceptible to irritation; thus we find it a favoured location for malignant tumours. An early symptom occasionally seen, and one that may be suggestive of carcinoma of the tongue, is pain in the middle ear.

RESPONSIBILITY OF DENTIST

Now, with this brief comment on the tumours, let us pass on to the purely dental side of the question, and consider first the responsibility of the dentist for the placing of non-irritating dental restorations; and then we can pass on later to his place as the careful observer of all oral changes, both of tissue and of saliva, that may influence the maintenance of a normal mouth condition.

In the placing of full dentures in the mouth, care must be exercised that the attachment of the muscles of the cheek to

the alveolar ridge is not impinged upon, or it will be cut and considerable hypertrophy may result, which may later become the seat of an epithelioma.

The base used to construct the denture may be of vulcanite—red, maroon, or pink—but sometimes this is quite irritating to certain mouths, due to the colouring material used, a mixture of mercury and sulphur called cinnabar or vermillion. It may not be amiss at this juncture to explain the composition of vulcanite bases often used, since the red, maroon and pink are supposed to be more irritating than the black or other colours. When the raw caoutchouc, sulphur, and cinnabar are mixed, we get the raw rubber, red or maroon, which is later vulcanized and used as a denture base. When zinc crystals are added to the above mixture and vulcanized, we get the pink base used to imitate the natural gum in colour. It is quite reasonable to suppose that some of the mercury previously combined with sulphur in the colouring material (cinnabar or vermillion) may be released during vulcanization, and so find its way slowly to the surface where it will be brought into intimate contact with the mucous membrane.

The porcelains on artificial dentures are often ground, and sharp angular corners left at the occlusal edges. Of course, these are just as irritating as sharp corners on natural teeth. Then, again, porcelain sometimes fractures, leaving angular edges that may irritate. The normal buccolingual relationship of the upper and the lower teeth must be retained; that is, the upper teeth must be half their width buccal to the lowers to protect the tongue in the lingual and the cheek tissue in the buccal. The soft rubber vacuum cups sometimes used to

retain dentures are especially irritating and should never be used.

The clasps and retainers on partial dentures and removable bridges must be so constructed and fitted that no irritation will result. Frequently they fail badly in this respect.

It has been suggested, in certain quarters, that large silver amalgam restorations may well be under suspicion, due to their high mercury content. Observations to date leave one with an open mind, and it may well be that the mercury content is a factor in some cases of leucoplakia.

SMOKING

The continuous use of a pipe may be the means of definitely irritating a hyper-sensitive mucous membrane on the cheeks, since the cheeks act as a bellows, and it has been noted that the cheek opposite the corner of the mouth where the pipe is carried, is much more favoured as the seat of an epithelioma, when present in smokers' mouths. Again, the tarry products drawn into the mouth from a pipe should be looked upon with suspicion. The amount is astonishing, and it is very revealing to examine the palate of an artificial denture worn by a heavy smoker. When no denture is worn, we often find the hard palate exhibiting that cauterized surface with red dots, showing the opening of the ducts in the mucous membrane.

CHARACTER OF SALIVA

Earlier in this paper, reference was made to the necessity of noting the character and amount of the saliva. Personal observation leads one to believe that there is a very definite connection between epitheliomas of some types and lack of mucin in the saliva. The mucin assumes

the role of the great lubricator and protector. When its lubricating coat is absent, as in some of the anaemias, we find the tip of the tongue sore; so we may well assume that lack of its protection will find the oral tissues more susceptible to every type of irritation.

It has often been noted that those patients over forty years of age are more susceptible to carcinoma than those younger, and this readily coincides with the lessened mucin content of their saliva. Young patients, on the other hand, are usually well supplied with mucin content.

The use of white vaseline dressing worn at night has had, in some cases, a very beneficial effect on leucoplakia of the buccal tissues; and this, in conjunction with a saline mouthwash, is, I believe, a rational treatment. How to promote a more satisfactory secretion from the mucous glands is rather beyond my field; but in passing I may say that I believe it will be found that low acidity of the stomach juices often will be found associated with low mucin content of the saliva, with a tendency to dryness of the mouth and with small frothy islands of saliva on the tongue. It may be possible that the history sheets, if checked with salivary conditions, will give us a clue. It would seem to be well worth some observation.

In closing, may I express the sincere appreciation of the dentists of Winnipeg for the courtesy extended to us in this meeting; also may I venture the hope that all will collaborate in the work of early diagnosis and in the elimination of all irritating points in both natural and artificial dentures, and so discharge their obligation to the public in this extended field.

611 Medical Arts Building.

THE DENTAL SECTION OF THE CARLETON COLLEGE HEALTH SERVICE NORTHFIELD, MINNESOTA

By WILLIAM A. GREY, D.D.S., Saint Paul, Minnesota.

THE Carleton College Dental Health Service was started in January, 1931, and was reorganized in the fall of 1932 into its present form. This includes a separate room for examination, an x-ray room with a lead screen for the protection of the operator, an office for the assistant, adequate space for developing, and a room equipped for mounting and reading films and the keeping of records.

The primary function of the dental service has been to educate the students to an appreciation of the value of mouth hygiene and its relation to general health. Existing defects are brought to their attention, and the importance of having them corrected is emphasized.

The writer gives an illustrated lecture to the freshman class at the beginning of the college year. The characteristics and value of a healthy mouth are discussed as contrasted with the diseased conditions so often found, placing special emphasis on preventive rather than curative measures.

The routine work of the service is carried out in the following manner. Students each year have two appointments. At the first a fourteen-film set of radiograms is taken and at the second the examination is made. At this time all cavities and conditions visible clinically are checked and recorded, then the radiograms are used and any further defects are noted. After a careful consideration of the two a diagnosis is made. The

educational value of our work is always foremost. Time is given to the individual student at the examination to explain the importance of defects and any other existing conditions not only from the standpoint of a healthy mouth but from general health as well. Any questions that the student may ask are answered. This year for the first time seniors have had the advantage of four complete sets of x-rays and accompanying diagnoses.

The work of the service is entirely diagnostic and advisory. When the students leave the office, they are reminded to call for their radiograms before visiting their dentists. At no time are students referred to a dentist.

The Northfield dentists give about two hours per week assisting in the diagnostic work. There is a thorough understanding with each man, that if anything is said from any angle which might influence the student to go to him for work, he would be dropped immediately from the service. We wish to emphasize the high standards of loyalty, good workmanship, and co-operation carried out by every man engaged in our work.

A brief summary of the findings of the examination of 682 students follows:

Total number of cavities found	
without the x-ray.....	1862
Additional cavities found with the	
x-ray	1033
Average number of cavities per	

The Dental Section of the Carleton College Health Service

student	4.2
Total number of pulpless teeth.....	97
Total number of abscessed teeth.....	33
Total number of missing teeth.....	931
Total number of unerupted teeth.....	1216
Total number of impacted teeth.....	61
Total number of teeth which we recommended to be extracted.....	145
Total number of new fillings.....	982
Average number of new fillings per student	2.3

A pulpless tooth, according to our interpretation, is one in which the pulp has been removed and the root canals partially or entirely filled. Abscessed and pulpless teeth are considered as potential foci of infection. Definitely abscessed teeth are advised removed unless there is a possibility of restoring them to a completely healthy condition. At the suggestion of Dr. C. H. Mayo and Dr. E. C. Rosenow of the Mayo Clinic, the medical service is consulted concerning students having pulpless teeth, periodontal lesions or any other condition in the mouth liable to be a focus of infection. The medical and dental service records are compared and from the two a final diagnosis is formulated as it relates to the general health of the student.

Large cystic formations, involving extensive destruction of the jaw bone, were found in the mouths of three students. These conditions are serious and, if they had not been discovered, might have caused irreparable damage.

Before recommending the extraction of teeth careful consideration was given to the students' general health, and also to the preservation of the dental arch from the standpoint of function and aesthetics.

We realize that if the importance of the preservation of the teeth, and the maintenance of a healthy mouth had been emphasized earlier in life, and the mouth checked periodically, a large percentage of the missing teeth might have been saved. All of these teeth were essential in the dental arch for health, mastication and aesthetics.

By impacted teeth we mean third molars definitely impacted, that is, with no chance of their eruption. In our judgment, these teeth, due to their malposition, can never come into their proper functional relationship with the other teeth in the arch, and are likely to cause neuralgia, inflammatory conditions of the surrounding tissues extending back into the throat region, and injuries to adjacent teeth. We have advised the removal of almost all of this group, since we feel that many of these conditions can be



WILLIAM A. GREY

avoided by early detection and removal of impacted teeth.

By "unerupted," we mean those teeth where we think that there is a strong likelihood that they will not come into their normal position in the arch unaided, or those which we feel require orthodontic measures.

Our main concern in the beginning of our work was to gain the interest and co-operation of the students themselves. In regard to the attitude of the students, it is not only our opinion, but also that of the dean of the college, that in general their attitude is one of co-operation and appreciation. It has been very gratifying to see the amount of recommended work which has been carried out for students between yearly examinations.

It was decided in the fall of 1932 that an investigation should be made of the mouths of all college employees engaged in the handling of food. The same type of x-ray and examination as that given to the students was given to those in charge of the food. This is the third year that this service has been rendered and the results and increased interest have been most gratifying. The nominal fee of \$1.00 is charged for examination.

Several members of the faculty and administration come in each year for complete sets of radiograms for which \$5.00 is charged.

During the years that this work has been carried on, lantern slides have been made of interesting and outstanding cases. These are used in the freshman lecture, lectures at other colleges, and to present the Carleton dental work at dental society meetings.

A booth was maintained at the national convention of the American Dental Association in St. Paul, August, 1934.

Complete dental service records showing how our work is carried on and lantern slides were available to anyone interested.

After four years of this work, we are of the opinion that the educational work has been far more beneficial than if we had attempted a restorative department. Our judgment is that where restorative work has been placed in an institution the individual educational work with the student has been neglected. From the standpoint of the dental profession, it has stimulated those who have come in contact with the students' reports or have become thoroughly informed of our work, to greater efficiency and a higher standard of dentistry.

Always uppermost in our minds are the benefits to be derived by the students through the dental service by the educational work and by bringing to their attention necessary work to be done. In our judgment the dentist derives much benefit from this work through the stimulus that he receives from greater efficiency in his office.

One of the most gratifying things in our four years of work is the increased interest and appreciation shown by the entire student body and faculty.

In looking forward to the coming year we hope to incorporate into our program the opportunity to give periods of instruction to all freshman students and others, to whom we feel it would be beneficial, in the efficient care of the mouth.

One thing foremost in our mind as this work was started, was to determine the value of full-mouth x-rays for people of college age. After x-raying the mouths of about 3,000 students, we think we have data that can be depended upon.

In our findings this year, by careful

examination, 64% of the cavities were found without the x-rays and the balance of 36% were found with the assistance of the x-ray. When you stop to consider that besides cavities and periodontal conditions, devitalized, abscessed and impacted teeth, as well as defective fillings are found which conditions would most likely have been missed, we cannot emphasize too strongly the value of full-mouth x-rays for young people of college age.

In accordance with our findings, we

predict that in the near future this work will be started with young people of high school age, instead of waiting until they are of college age, when so much damage has been done.

In conclusion, we wish to express our sincere appreciation for the splendid co-operation given us by the men throughout the country who have rendered dental services to the students who have attended our college.

923 Lowry Medical Arts Building.

THE EMPIRE MEETING OF DENTAL SURGEONS TO BE HELD IN LONDON IN JULY, 1936

By J. LEWIN PAYNE, O.B.E., L.R.C.P. (Lond.), M.R.C.S., L.D.S., Eng.

AT THE Plymouth meeting, Mr. Frank Pearce, of Guy's Hospital, was appointed to the post of President-elect, and will fill the high office of President of the British Dental Association during the Empire Meeting which is to be held in London, July 24th-27th, 1936.

It is hoped that a large contingent of Canadian dental surgeons will attend this

meeting and renew many of the happy associations made in 1932.

Arrangements are being made for a tour through Great Britain and Ireland, which will afford Empire visitors an excellent opportunity of seeing the Mother Country, and of inspecting many of the dental schools of Great Britain and Ireland.

MONTREAL DENTAL CLUB

THE Eleventh Annual Fall Clinic under the auspices of the Montreal Dental Club will be held at the Mount Royal Hotel on October 17-19.

Dr. C. W. Bierman from Minnesota, will speak on "Children's' Dentistry", Dr. U. G. Rickert of Michigan, on "Materia Medica and Therapeutics," Dr. V. H. Sears of New York, on "Full Denture Construction," and Dr. W. H. MacMillan

of Cincinnati, Ohio, on "Oral Surgery."

Manufacturers' demonstration, group discussions and clinics by and for assistants will add to the program.

Dr. F. W. Saunders of 1414 Drummond St., Montreal, is chairman of the publicity committee and will be glad to supply any information to visiting dentists.

SOME PHYSIOLOGICAL ASPECTS OF THE SUPPORTING TISSUES OF THE TEETH*

By D. P. MOWRY, D.D.S., Montreal, Quebec.

I WOULD have dearly loved to have introduced this subject by a consideration of the theories of the origin of life such as propounded by Lucretius, Pasteur, Tyndall, Arrhenius and others, together with the steps of growth, reproduction, motion, irritability, metabolism, the control of life, etc., but I have been requested by sincere friends to speak a common language. Permit me, however, the indulgence of this quotation:

"Upon man's control of nature rests all our civilization. The last and most difficult step in the conquest of nature is the control of life. This offers so much promise that no effort is too great to consecrate to it, and each step forward is of fundamental importance for human welfare." (1)

The pathological changes to be found in and about the teeth of modern man remain a problem to the dental profession. To the general practitioner of medicine it is a matter of slight interest at the present time; witness the amount of dentistry taught to the medical student.

All that we do for the patient who presents himself with dental caries is of a palliative character and this is nearly true for periodontal lesions. If it were otherwise we would be able, with the assistance of the physician, to so scientifically, physiologically examine the body as to correct and adjust hyper and hypo glandular activity, render the blood chemistry adequate, discover and relieve allergic idiosyncrasies, etc. Having re-

stored the lost tooth tissue by present-day mechanical methods which are, indeed, worthy of much praise, there would be little or no recurrence, because attention would have been given to the physiological function of the body.

A detailed systemic examination must some day become the rule, not only for caries and periodontoclasia, but also for edentulous cases, because the preservation of the alveolar ridge has been shown to be dependent upon the calcium-phosphorous balance in the blood, which can be ascertained by adequate tests now available to the medical profession. (2)

The germ theory of the cause of disease is, no doubt, true under given conditions. I contend, however, that the prevention and cure of these conditions are to find their control in that branch of human knowledge known as physiology, which may be defined as that science which treats of the manner in which individual parts of the body carry out the processes of life. The central problem in understanding the nature of the remarkable stability of our bodies is that of knowing how the uniformity of the fluid matrix is preserved. (3)

There are many cases referred to the periodontist which could be as well treated by the general practitioner, provided he would manifest sufficient interest in the subject to acquire the technique and histological knowledge necessary for a proper understanding of prognosis. I assume that my presence here, tonight, is to some degree related to the need of the general practitioner.

*Read before the Academy of Dentistry in Toronto, March, 1935.

Some Physiological Aspects of the Supporting Tissues of the Teeth

Let us, therefore, have a short review of the histological character of the supporting structures of the teeth, so that we may understand the result of function and stress upon the crowns of the teeth. The tooth germ becomes embedded in the connective tissue, having arisen as an invagination from the surface epithelium. The growth of the root of the tooth is accompanied by the formation of cementum which embeds fibres from the periodontal membrane and thus transmits the tension of the growing tooth to the surrounding bone which has been developed about the tooth germ by intramembranous ossification. Upon eruption of the tooth to a position of occlusion, functional force becomes operative and new bone trabeculae develop. Bone is one of the most interesting tissues of the body. It is not a fixed tissue in the chemical sense, reacting, as it does, to changes in diet and endocrine influence. It is especially sensitive in response to physical stress and maintains an architectural design in direct ratio to the function.

Even normally, the teeth do not remain in a fixed position, but move physiologically in the direction of the middle line and continue to slowly erupt. (4)

It is my conception of the duty of the dentist that he should be able to so adjust the occlusal surfaces of the teeth and maintain the gingival third in such a state of functional cleanliness that a state of "homeostasis" may obtain. The conception of this condition is very important, so I quote from Dr. Cannon: (3)

"The constant conditions which are maintained in the body might be termed 'equilibria.' That word, however, has come to have a fairly exact meaning as applied to relatively simple physico-chemical states, in closed systems, where

known forces are balanced. The co-ordinated physiological processes which maintain most of the steady states in the organism are so complex and so peculiar to living beings—involving, as they may, the brain and nerves, the heart, lungs, kidneys and spleen, all working co-operatively—that I have suggested a special designation for these states, 'homeostasis.' The word does not imply something set and immobile, a stagnation. It means a condition—a condition which may vary, but which is relatively constant."

This should be the idea behind dental treatment. The cusps of the teeth guide them to place in the early years of life and provide stimulation to build the bundle bone of the alveolus and determine, to some extent, the density of the external and internal alveolar plates of bone. As life moves on, the rate of growth change lessens and this is the time when natural wear should be reducing the heights of the cusps and the length of the anterior teeth. This occurs with native races. With civilization this does not obtain. The dentist, then, should mechanically reduce the height of the cusps by grinding or by inserting fillings in the occlusal fossa to the height of or above the cusp. Grinding or filling, as the case may be, should tend to bring the stress of occlusion in line with the long axis of the tooth and the line of occlusion should be at or lingually to the centre of the ridge, as is being found advantageous in full and partial denture prosthesis. One reason for this last is that the contact points are maintained, due to the stress in an arch being toward the centre.

Students of the natural dentition owe much to the research and experience of

prosthetic dentistry. In consultation with Dr. J. S. Dohan, Professor of Prosthetic Dentistry at McGill, this fact was emphasized: the need for so-called anatomical articulation and three-point contact was necessary for the health of the supporting tissues when *not* in function for mastication. When a bolus of food is between the teeth unilaterally, the teeth on the opposite side are not in occlusion and, further, the function of the teeth for mastication occurs during a few minutes of each day. During the remainder of the time, the teeth, whether natural or artificial, exert a stress upon the supporting tissues. The articulation of the teeth in relation to the movements of the mandible will determine whether the effect is within the range of tissue tolerance, in other words, whether or not it is physiological. Individual habits, especially during sleep, probably cause a greater tissue strain and its resultant pathology than conscious use. Inasmuch as a patient cannot remove the natural dentition during sleep, the necessity for the eradication of lateral stress is self-evident. I have found the thing called "Spherical Occlusion" and the Monson theory very suggestive. (6)

The adjustment of occlusion, together with prophylaxis, is a physiological treatment. When the dentist has done his part and finds that caries persists and that tissue tone does not respond to faithful hygiene, it is reasonable to suspect some systemic complication. As a suggestion to begin your investigation of this phase, I quote Reynolds: (5)
"Conclusions:

1. In a series of thirty-six cases studied with advanced paradentosis, 86% revealed co-existent endocrine disturbances.
2. Of these endocrine disturbances,

hypothyroidism was found to predominate (27.8%).

3. The limited data on the aetiology of paradentosis indicate a constitutional or deep-seated chemical condition as a possible cause."

I may say that research work at present going on at McGill indicates a very intimate relationship between dental health and the activity of pituitary, thyroid, and parathyroid glands.

Pathology has done a great work for medicine and must, of course, continue; but let us hope that the correct diagnosis of disease will be less and less dependent on post-mortem findings. The scientific knowledge—both clinical and laboratory—as to the functioning of the cells and tissues in life will enable us to so regiment (I use the term advisedly) the individual that he will sail down the stream of human years with the diverse entities of his complex organism so co-ordinated that life will be more truly conscious.

"Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from Heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life's
unresting sea!"

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1411 Stanley Street.

THE DENTAL FELLOWSHIPS AT THE UNIVERSITY OF ROCHESTER

By O. W. CLOUGH, B.Sc., D.D.S., M.S., Inverness, Nova Scotia*.

TO QUALIFIED dental graduates interested in anatomy, bacteriology, biochemistry, pathology or physiology, the University of Rochester, School of Medicine and Dentistry offers a limited number of fellowships under a grant from the Rockefeller Foundation. The special training thereby acquired in these allied sciences is an invaluable aid in meeting the problems of dental practice, and offers an opportunity to the student who prefers to equip himself for investigation and teaching.

On the average about eight dental Fellows are associated with the school. Of these, two have been classed as Senior Fellows in Dentistry and have been given responsibilities in regard to the dental group.

According to his interest the Fellow is accepted as a graduate student in whichever department he joins, and he may attend medical classes, seminars and staff meetings. Subject to action of the graduate council of the University, the work may be applied towards the degrees of M.S. or Ph.D., but not towards the M.D. degree.

Although Fellows may obtain clinical material through the staffs of the Strong Memorial Hospital and the Rochester Dental Dispensary, clinical facilities in dentistry are limited because of the absence of an undergraduate dental school.

A dental Fellow on entering the School of Medicine and Dentistry is given ample time to use the well-equipped library to familiarize himself with dental litera-

ture and research problems. After he has decided upon the department to which he wishes to become attached, he is given laboratory space for his work, and all equipment.

The entire faculty and especially the professor and staff of the department in which the student is located respond generously to any need of the student for advice concerning the selection and progress of his problem. The faculty deem it more advantageous to the student's success if he proceeds on his own initiative with a problem of his own selection.

Besides the required participation in the seminars of their respective departments, the Fellows meet regularly in a dental seminar where their research problems are discussed and current dental literature is surveyed.

Since the inception of dental fellowships at the school, there have been fourteen Fellows. Of these, five have been affiliated with the Department of Bacteriology, three with the Department of Pathology, three with the Department of Biochemistry, two with the Department of Anatomy and one with the Department of Vital Economics. Three Fellows have been placed in teaching positions in dental schools; two have received other fellowships and are continuing their research activities; two have entered private practice. Four have received their M.S. degree from the University of Rochester and at least one is preparing for the degree of Ph.D.

*Rockefeller Fellow in Dentistry, The University of Rochester, School of Medicine and Dentistry, Rochester, N. Y.

The Dental Section of the Carleton College Health Service

The results of their studies have been made public through papers read before dental and research audiences, and printed in scientific journals.

A list of reprints which may be obtained from the group follows:

1. A Study of a Pigmented Dental Plaque. Basil Glover Bibby. *Journal of Dental Research*, 11, 855.
2. Tumour Metastasis in Jaw, Leading to Recognition of Primary Tumour of Ovary. G. Van Huysen and W. R. J. Wallace. *Dental Cosmos*, 1932, 74, 53.
3. Studies of Blood Calcium and Phosphorus from a Dental Aspect. Edward C. Dobbs. *Dental Cosmos*, 1932, 74, 867.
4. The Organic Structure of Dental Enamel as a Passive Defense Against Caries. Basil Glover Bibby. *Journal of Dental Research*, 1932, 12, 99.
5. Surface Resistance of Human Enamel to Acid Decalcification. Edward C. Dobbs. *Journal of Dental Research*, 1932, 12, 581.
6. An Anatomical Path for Infra-Orbital Injection. H. Jobe Sedwick. *Dental Cosmos*, 1932, 74, 853.
7. Local Factors in Dental Caries. Edward C. Dobbs. *Journal of Dental Research*, 1932, 12, 853.
8. The Microhardness of Teeth. Harold C. Hodge and Harold McKay. *Journal of American Dental Ass'n*, 1933, 20, 227.
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21. The Amylolytic Enzyme of the Saliva in Relation to Dental Caries. C. D. Marshall Day. *Dental Cosmos*, 1934, 76, 683.
22. The Relation of the Teeth to the Floor of the Maxillary Sinus, at Ages Eleven to Sixteen, Studied by Means of the Radiogram. H. Jobe Sedwick. *Dental Cosmos*, 1934, 76, 842.
23. Form, Size, and Position of the Maxillary Sinus at Various Ages Studied by Means of Roentgenograms of the Skull. H. Jobe Sedwick. *American Journal of Roentgenology and Radium Therapy*, 1934, 32, 154.
24. The Fat-Soluble Vitamins and Dental Caries in Children. C. D. Marshall Day and H. Jobe Sedwick. *Journal of Nutrition*, 1934, 8, 309.
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THE FORUM

RECORDS IN LONGEVITY

ON THE front page of the London Times during 1934, the deaths of 460 persons 90 years old and over have been recorded. Of these 127 were men and 333 women. Of the latter 207 were married. The centenarians who died in 1934 numbered eleven, one only of whom was a man, and six of the women were married. In Ireland the burial of a woman aged 123 was recorded. The

oldest man in Austria, who recently carried off first prize at a village dancing competition, died at 110. The oldest woman in Western Canada, Mrs. Marie Greenwich, of Edmonton, Alberta, died at the age of 109. The oldest woman in Germany died at 106.—*Excerpt from foreign letters in the Journal of the A.M.A., March 9, 1935.*

FEE-CUTTING

THE artist or the professional man who sells his talent or personal service below the fee established by competition is guilty of personal suicide.

One cannot win the stakes in the eco-

nomie game except by playing the cards according to the rules, and the rules are always right. If you break them they get you in the end.—*Dental News.*

SMOKING AND ITS DANGERS

NICOTINE is the most harmful of the products of tobacco smoke; much less so are the hydrocyanic acid, volatile pyridine bases, ammonia, sulphuretted hydrogen and carbonic oxide. According to L. Frank of Berlin, about 25% of the total nicotine reaches the mouth, and according to van Druten the average nicotine content of Turkish cigarette tobacco is 1.2%, and of ordinary cigars 1.7%. The damage to health depends very much on the manner of smoking. With inhaling, which is very common in cigarette smokers, 8% to 17% of the nicotine

is taken into the system, and only 2.5% to 4.5% without inhaling. The paper of the cigarette probably does no harm. The commonly accepted harmlessness of pipe-smoking is attributable to the small amount of nicotine in the tobacco, only 0.5% to 0.8%, which is due to the method of preparing it. The harmful effects of tobacco smoking may be very largely prevented by selecting the material, by refraining from inhaling and by moderation.—*Deutsche Zahn. Woch.*, No. 48, 1934.

A CONUNDRUM

IF YOU had your choice, would you work for eight hours a day and retire with a full pension at 45, or would you

rather work four hours a day and keep working until you are 70?—*By George Bernard Shaw in the "Listener."*

DIETARY SOLICITUDE

OBVIOUSLY abuse can wreck a sturdy frame, but it is also true that no amount of dietary solicitude, and no heroic devotion to a "daily dozen", will carry an individual into advanced old age

if he has a constitution inadequate for the journey. To put it another way: it makes less difference what you *do* than what you *biologically are*.—*Raymond Pearl, Professor of Biology, Johns Hopkins University.*



"GLASS OF MILK AND A FAIRY-CAKE, MISS"

(Reproduced by kind permission of the proprietors of "Punch".)



PRINCE EDWARD ISLAND



W. T. Waye, Charlottetown

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

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BRITISH COLUMBIA



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DENTAL HEALTH SERVICE IN OUR SCHOOLS AND COLLEGES

An article by Dr. William A. Grey of Saint Paul, entitled "The Dental Section of the Carleton College Health Service", appears in this issue of the Journal.

Carleton College is a pioneer liberal arts college located at Northfield, Minnesota, forty miles south of Saint Paul and Minneapolis.

The college was founded in 1866 for the children of New Englanders who had moved west, and, since 1909, Dr. Donald J. Cowling, the distinguished educationalist and religious worker, has been president.

The enrollment at Carleton is approximately 800 students, men and women, half of whom come from outside the State and practically all of whom live on the campus.

Of Carleton's sixty-six faculty members, forty have doctor degrees and twenty-three are listed in the current issue of *Who's Who in America*. Such men as the Honourable Frank B. Kellogg, former United States Secretary of State; Mr. Ralph Budd, President of the Burlington Railroad lines; and Doctor Charles H. Mayo of the Mayo Clinic, are members of the Carleton Board of Trustees.

In the college bulletin we read that "Carleton is interested in its students primarily as individuals capable of rendering a worth-while service to their day and generation." The leaders at Carleton realize, that no student can get the best out of his school and college life if he harbours within his mouth numerous foci of infection.

Dr. Grey is in charge of the splendid dental service at Carleton, and travels to Northfield each week. He deserves great praise for the efficiency with which he directs this service.

In his paper Dr. Grey points out that at this college *it is a matter of routine for each student to have a full mouth x-ray examination yearly*, followed by a clinical examination. Time is taken also to instruct the students thoroughly as to the importance of mouth hygiene and its relation to general health. The dental work is entirely of a diagnostic and advisory nature, and the plan has the hearty endorsement of the profession in Northfield as well as in the more distant centres where the various students reside.

The findings from the examination of 682 students are startling enough to convince the most skeptical of the value of this service. Dr. Grey wisely points out that if this compulsory examination commenced earlier in life most of this trouble could have been avoided.

Under the present system of government, Carleton has the ideal dental service. The student, the teacher, and those who serve in a more menial capacity, have a thorough examination and become enthusiastic over the idea of obtaining a healthy mouth. No restorative work is done at the College, which greatly benefits the dental profession over a wide area, and so the hearty co-operation of the profession is assured.

The Babson Institute of Babson Park, Massachusetts, a smaller school than Carleton, organized for training men to become business executives, also requires all its students to have a dental examination by the Institute dentist. This examination, which includes a *full mouth x-ray*, is given shortly after the student has enrolled. President Earl D. Smith states that this service is very much appreciated by the students, as in all the years it has been given there has been only one complaint on the part of a student and that was when the student claimed he had just had his teeth put in a satisfactory condition by his home dentist. However, upon x-ray examination many cavities were discovered.

Is it too much to hope that such a system may become, in the near future, a matter of routine in our Canadian schools and universities?

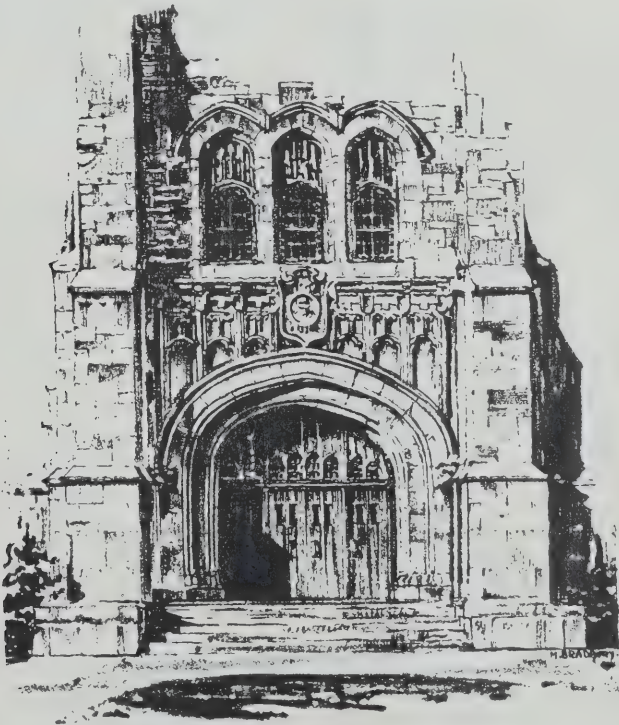
Is it more important to have an educated nation than it is to have a healthy nation? We give the boys and girls in our schools the best mental training that experts can devise. Do we give them the best physical training? Do we see that they have healthy bodies and are trained to the point of enthusiasm over keeping their health, and so develop into strong men and women? The answer is generally No; and so it behooves the dental profession of Canada to attack this problem with all the vigour possible.

Dental Health Service in Our Schools and Colleges

"What would Gladstone have accomplished with a weak, puny physique? He addresses an audience at Corfu in Greek, and another at Florence in Italian. A little later he converses at ease with Bismarck in German or talks fluent French in Paris, or piles up argument on argument in English for hours in Parliament." Can one imagine any such accomplishment in other than a healthy body?

As a profession we have the responsibility of urging our leaders to give adequate attention to the important matter of oral hygiene. Much has been accomplished in this field through the remarkable service of the Canadian Dental Hygiene Council, under the direction of its dynamic and popular secretary, Dr. Harry Thomson, but there still remain worlds to conquer.

In Canada this question of adequate dental service in our schools and universities can be handled best through a well-organized Canadian Dental Association, having full-time officers, who can devote their whole time and energy to the interests of our Association and to the very many tasks that confront our profession. *"No pleasure is comparable to standing on the vantage-ground of truth."*



Carleton College.

NEWS FROM THE PROVINCES

NOVA SCOTIA

CONVENTION OF NOVA SCOTIA DENTAL ASSOCIATION

By A. W. Faulkner, D.D.S.

The Nova Scotia Dental Association met at Pictou Lodge on July 4th, 5th and 6th. Dr. W. C. Bushell, of Montreal, one of the visiting clinicians, devoted the time allotted to him on the program to porcelain work for the general practitioner. His clinic was very practical, and was commented on very favourably by those in attendance.

Dr. R. E. McMahon, also of Montreal, gave bedside clinics in the Cottage Hospital on exodontia which were well attended. He elaborated his technique at round-table conferences, touching on many practical points in oral surgery. Both clinicians worked industriously to ensure a successful meeting and their efforts were well-rewarded.

There were one or two things in connection with the meeting that provide food for thought. A tendency to hurry through the business meeting and get all reports over with as quickly as possible was evidenced. There was even a notice of motion (afterward withdrawn) providing for cutting off the discussion of reports by referring them to an examining committee. There may be members who are not interested in the various activities of the profession as a whole and find reports and the ensuing discussions a bore, but after all, what is the Annual Meeting for? It seems to me our chief concern when we meet annually should be to discuss fully the reports of our various committees, to survey the activities within the profession during the previous year, and to formulate plans for more usefully contributing to the general welfare of mankind.

If the chief aim of our executive committee is to put on a series of classes in postgraduate instruction, then we may become more skilful as individuals, but we do so at the cost of loss of opportunity to develop as a profession. We become better technicians, but poorer professional men. It might be better to limit our Annual Meeting to business largely and have local men fill in spare time (if any), and put on our clinics or postgraduate work in a special session at another time. By that plan

business would not encroach upon clinics or vice versa. Any person who is not thinking in terms of the profession would not attend the business meeting, hence there would be no problem of keeping him contented.

Another suggestion is to have all representatives, delegates, board members and committees nominated by a special committee after due deliberation. Opportunity could be given the meeting to add further names if desired. Our present method may be thoroughly democratic but it picks out the popular man, rather than the one with qualifications for the position.

One other suggestion follows. As the president retains his position for one year only, and the secretary is in office year after year, the latter officer should become thoroughly posted on points of law and order. Members were not permitted to withdraw their names after nomination despite the fact that a man cannot be elected to office without his consent. Another curious incident occurred when the meeting was informed that two absent members would accept office if elected—this before they were even nominated.

The *Sydney Dental Study Club* held a dinner meeting at the Isle Royale Hotel on May 14th. The dentists from the surrounding towns were guests. Dr. J. A. Burke, chairman of the committee in charge, presided. The feature of the evening was the showing of a film "Removal of the Mandibular Third Molar", prepared by Dr. George B. Winter, of St. Louis, Mo.

BRITISH COLUMBIA

British Columbia was well represented at the *Pacific Coast Dental Conference* held at Long Beach, California. This was one of the finest conventions ever held on the Pacific Coast, if not in America. The arrangements were most complete and carried out with extraordinary precision.

Over fifteen hundred dentists registered, and with their wives the total registration was well over two thousand.

One of the most outstanding papers and

clinics was that presented by Dr. J. A. Sampson, the subject being "Preventive Principles as Applied to the Adolescent".

The following officers were elected:

President—W. J. Lea, Vancouver.

Vice-President—O. T. Wherry, Portland, Oregon.

Secretary—W. S. Watson, Vancouver.

Treasurer—E. Fraser Allen, Vancouver.

By unanimous decision, the Board of Delegates decided to hold the 1938 session in British Columbia.

Early in July the *Victoria Dental Society* presented Dr. William Russell with a suitably engraved electric clock in appreciation of nearly thirty-five years of faithful service in the society.

The election of officers to the Council of the *College of Dental Surgeons* of British Columbia were: W. J. Gibson, and E. W. Hetherington, of Victoria; E. C. Jones, of New Westminster; W. J. Lea, R. L. Pallen, J. F. Hill and J. Dawson, of Vancouver; and E. H. Crawford, of Kamloops.

The new officers of the *Vancouver Dental Society* are: President—D. J. Sutherland; President-Elect—J. A. Sampson; Secretary-Treasurer—R. J. Stewart; and the Board of Censors—F. G. Bezeau, M. J. McDougall, E. E. Martin and Ralph Hall.

ALBERTA

At the annual meeting of the *Alberta Dental Association* the following officers were elected:

President—R. A. Rooney, Edmonton.

Vice-President—C. M. Fletcher, Lethbridge.

Hon. Secretary—A. B. Mason, Edmonton.

W. F. Adinell, of Ponoka, was named representative on the board for the Red Deer district and C. M. Fletcher for the Lethbridge district.

SASKATCHEWAN

The *Fitzgerald Chapter, Daughters of the Empire*, have equipped a very fine dental clinic at Saskatoon, in connection with child welfare work. The expense of upkeep is borne by the Chapter.



I. L. NICHOLLS

ONTARIO

ONTARIO'S OLDEST DENTIST

With a record of sixty years in active practice, Dr. I. L. Nicholls, of Chatham is today, at the age of eighty-three, the oldest practicing dental surgeon in Ontario.

Born in Ireland in 1852, he came to Canada with his family in 1855. They crossed the Atlantic in a sailing vessel. The trip required thirteen weeks, the vessel encountering severe storms, during which she lost her rudder.

The family settled in Toronto. In 1868 Dr. Nicholls entered the office of Dr. J. W. Elliott, situated at the corner of King and Bay Streets. He afterward went to the office of L. G. Callender on the corner of King and George Streets, and was also with Dr. R. G. Trotter. While in the office of Dr. Trotter, he studied dentistry at the J. G. Willmott College at the corner of Church and King Streets; and from this college he graduated in 1875. At that time the officers of the Royal College of Dental Surgeons were: President, C. S. Crittenden; registrar, L. G. Callender; secretary, J. Branstons Elliott; members of the board—L. Clements, S. Zimmerman, Henry F. Wood, Chas. P. Lennox.

After graduation, Dr. Nicholls settled in

Chatham. At that time the only other practicing dentist in Chatham was Dr. Chas. P. Lennox, who later moved to Toronto.

Dr. Nicholls recalls many interesting experiences of those early days. There were only mud roads, almost bottomless in the early spring and late fall, and transportation was mainly by horse and buggy. Dr. Nicholls used to travel by this means to the outlying communities of Kent county, taking the villages of Dresden, Wallaceburg and Morpeth alternately each week. He would sometimes stay two or three days in one place. Though the communities mentioned are only about 20 miles from Chatham, when the roads were in bad condition it often took him two days to reach his destination.

Dental methods in those early days were considerably different from the methods of today. Dr. Nicholls recalls that when he came to Chatham, the dentists used burnt limestone for making plaster casts, the lime being burnt locally. The vulcanite was not perfected as it is today, and trouble was often encountered in the steaming of the plates. Gold fillings were always malletted in, and never cast as so often they are now. It usually required three hours to restore one tooth in this way. The dentist manufactured his own gas for administering to patients, the gas being formed from nitrous oxide which had to be put through a purifying process of retorting and water filtering. The gold for plate work was rolled from ingots which were formed in crucibles by the dentist. Dr. Nicholls often made his own instruments to fit the drilling machines, all of which were worked, of course, by foot pedals.

Dr. Nicholls has always been a keen sportsman, and at one time was considered one of the best cricket players in the district. He also took a great interest in shooting, and in the study of wild bird and animal life, and he raised and trained a number of the best sporting dogs in the county. There being an abundance of game in the district in the early days, Dr. Nicholls was able to enjoy these sports to the fullest, and spent most of his spare time on the shores of Rondeau Bay and Lake St. Clair.

The Ontario government has discontinued its grants to municipalities in respect to *dentistry for children in public schools* as of April

1st of this year. These grants amounted in some cases to 7½%, with a maximum of \$1,000 as in Toronto and Hamilton, and in other instances to as much as 35% of the annual cost of the service. The Department of Health of the province must be aware of the tremendous value of dental service to children, and at first glance one is surprised. It is quite possible that newly organized services may be embarrassed as a result of this move, but one may well surmise a possible reorganization of the Dental Department with a new plan of meeting the need. Considerable progress has been made in Ontario to improve the dental health of our school children, and any backward step by our government in this connection without another plan to take its place is not expected.

In June *health certificates* were presented to classes in Frankland, Withrow, Jesse Ketchum, and Dufferin Schools, Toronto, where all the pupils had their teeth attended to and were found to be in good condition.

QUEBEC

A BY-LAW

ADOPTED BY THE PROVINCIAL BOARD OF
DENTAL SURGERY AT A MEETING HELD
ON THE 6TH OF JULY, 1935

Proposed:—Dr. C. Archambault.

Seconded:—Dr. Arm. Fortier.

That in conformity with Article 40 of the Revised Statutes of the Province of Quebec, 1925, Chapter 216, the Provincial Board of Dental Surgery adopts the following By-law:

"In addition to the provisions provided for in Article 122 of the Dental Law of Quebec, the following are declared derogatory to professional honour.

(1) The fact of a dentist advertising or having himself advertised through the medium of the radio.

(2) Advertising "Painless" operations.

(3) Advertising free consultations or examinations.

(4) Advertising a guarantee of his operations or dental services.

(5) Publishing in the daily papers, reviews, periodicals or other publications, any advertisement other than his professional card; this card to contain nothing but his name, pro-

News from the Provinces

fession, titles, his address, his specialty, office hours, telephone number.—The entire superficial surface not to exceed sixteen (16) square inches.

(6) The fact of a dentist distributing or having circulars, prospectuses or any other commercial literature distributed for him.

(7) The fact of a dentist advertising himself by means of luminous signs.

(8) The fact of advertising by means of any signs exceeding ten (10) square feet (superficial surface). This sign to contain nothing but the name, profession, specialty and the address of the dentist.

(9) The exhibiting in glass cases or otherwise, outside his office, any specimens or models of dental work whatsoever.

Any signs which are presently in use and which do not conform to the above By-Law must be removed or altered to meet the above required regulation within a delay of three (3) months from the date of the adoption of the present By-Law.

ADOPTED UNANIMOUSLY.

True copy.

DENIS FOREST, D.D.S.,
Registrar of the C.D.S.P.Q.

NEW BRUNSWICK

The *dentists of Woodstock* were the guests of the Rotary Club on July 15th, at which meeting reports were received on the club dental clinic for work among school children with needy parents. During the first five months of 1935, 113 pupils were treated.

The dentists doing the work were Doctors L. H. Reed, T. H. Lewis, G. F. Clarke, R. G. Thompson, and Karl Daman. Miss Dorothy Lovely, third year student in Fisher Memorial Hospital, acted as clinic nurse.

At the 40th annual convention of the *New Brunswick Dental Society*, Dr. J. J. Daly, Sussex, one of the three living dentists of the original twelve who formed the New Brunswick society on August 8, 1890, presented to the society an engraved gavel and pedestal which were accepted by Dr. MacDonald. The other two charter members surviving are Dr. James Magee and Dr. F. A. Godsoe, Saint John.

EMPIRE NEWS

BRITISH DENTAL ASSOCIATION

Patron: His Majesty the King.

13, Hill Street,
Berkeley Square,
London, W.1.
2nd May, 1935.

To the President and Members of the
Canadian Dental Association.

On behalf of the British Dental Association, I send congratulations and fraternal greetings to the Canadian Dental Association on the occasion of their Annual Meeting. We trust your deliberations may further the interests—scientific, political and social — of the profession whose welfare we both have so much at heart.

I should further wish to express the hope that many of your members will find it convenient to visit this country for the Empire Dental Meeting to be held in London next year.

This is a special occasion, when we hope to have with us representatives from the

Dominion and Colonies and one which we believe ought to prove of great interest to our kith and kin overseas.

We greatly desire to reciprocate the wonderful hospitality and many kindnesses which were given to those of our members who were privileged to be present at your great meeting three years ago.

With fraternal greetings,

(Signed)—

W. GRAHAM CAMPBELL,
President.

A copy of the above letter was received from Dr. Conboy on July 8th. The president of the B. D. A. evidently considered that the Canadian Dental Association was meeting with the Ontario Dental Association, as in 1932. As this was not the case, and as we appreciate greatly this gracious communication from the president of the British Dental Association, we have included his letter in this issue of the Journal for the information of our membership.—Editor.

ANNUAL MEETING OF THE BRITISH DENTAL ASSOCIATION

The British Dental Association held its Annual Meeting in Plymouth from June 7th-12th, when the new President, Mr. S. D. Venning, delivered his Presidential Address.

He contrasted the present position of the dental profession in Great Britain with that which it occupied fifty-two years ago when the previous Annual Meeting of the Association was held in the same city. In 1883, the membership of the Association was only 412. Today there were more than ten times that number. The President spoke concerning the origin and advance of Public Dental Services in

Great Britain and the fields opened up by modern scientific research which had led to improvement in every branch of dental work.

Papers were read on "Methods of Keeping Accounts in Dental Practices" and "A New Plastic Denture Base". Papers dealing with the Psychology of the patient in relation to the employment of sedative drugs in dentistry led to an interesting discussion, in which the danger of self-drugging was mentioned. During the meeting some fifty to sixty demonstrations were given under the various headings of:—Operative Dentistry, Oral Surgery, Prosthesis, Orthodontics, Radiology and Histology, and a series of cinema films were shown.

—J, LEWIN PAYNE.

GENERAL NEWS

CANADIAN FOUNDATION FOR PREVENTIVE DENTISTRY

The Canadian Foundation for Preventive Dentistry, operating for some years in the interests of public dental health, and particularly for children who otherwise would not receive dental service, has from time to time been offered various formulae and patents, in the hope that the articles produced and marketed would yield funds to carry on this and other work of importance to dentistry and the public. The executive, after much investigation from both the commercial and the research ends, have taken over the trademark "Guardent" and will issue some of the articles and preparations given to the organization along with the powder which has had national distribution for some years. Part of the profits will be used for the furtherance of the mouth health of children of school and pre-school age as the Foundation believes that the care of children up to ten years of age is really

preventive dentistry in its most efficient form. It is hoped that assistance may be given to research efforts, benevolent funds, and other efforts that are of value to the profession and the public, but which have been neglected because of the paucity of funds available for these purposes.

B. E. BROWNLEE, D.D.S.,
Secretary, Winnipeg, Manitoba.

•
German dentists, as a result of the present economic semi-isolation of their country, are complaining that they cannot get enough gold for filling teeth.—*The Dental Magazine and Oral Topics*.

•
A report from Belgrade says that at a painful moment in the chair, a patient bit the dentist's finger so severely that it had to be amputated. The dentist is suing the patient for grievous bodily injury.—*The Dental Magazine and Oral Topics*.

IN MEMORIAM

GARNET S. ATKINSON—well-known dentist of Exeter, Ontario, and a major in the Huron regiment, died at Goderich Hospital on July 15th, the result of a gunshot wound inflicted in an accident. Major Atkinson went overseas with the First Division Dental Corps. The funeral was conducted with

full military honours from the Presbyterian Church in Exeter.

•
SHAUNESSY—The association wishes to extend to Doctor J. O. Shaunessy and family of Toronto, East, its sincere sympathy in the great loss which they have sustained in the passing of Mrs. Shaunessy on July '6.

SECTION FRANÇAISE

Rédacteur.

PHILIPPE HAMEL, B.S., D.D.S.,
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Rédacteur-Adjoint.

ALCIDE THIBAUDEAU, D.D.S.
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ALBERT JOACHIM, D.D.S.,

Président du Quatrième Congrès Dentaire
National Belge.
3 rue de Hornes, BRUXELLES.

FRANÇOIS ACKERMANN, M.D.,

Médecin-dentiste.

33 rue du Rhone, GENEVE.

QUELQUES ARGUMENTS CONTRE LA THEORIE DE LA SPHERE ET SA TECHNIQUE

par le Dr. Fr. Ackermann Médecin-Dentiste à Genève

LE Confrère L. Poullot a publié plusieurs articles dans la "Semaine Dentaire," celui du 9 juin 1935 fait allusion à certaines de mes publications. Je crois donc utile de répondre en exposant en toute objectivité quelques arguments sur lesquels je me suis basé pour ne pas croire à la théorie de la sphère, non seulement en théorie mais aussi en pratique.

Les théories même en prothèse sont nécessaires, puisqu'elles contribuent à améliorer les techniques et par là même les services que nous devons à nos patients. Les théories ne sont cependant que des moyens destinés à expliquer certains problèmes ou phénomènes. On ne peut les qualifier de "scientifiques" qu'après de nombreux et sévères contrôles réalisés dans divers milieux universitaires. Il faut donc être très prudent dans l'emploi du mot "scientifique," terme qu'il est préférable d'attendre de l'opinion compétente. Les travaux des chercheurs sont des "essais" presque toujours uni-

latéraux. Ces essais invitent à la prudence, car il n'y a une certitude c'est qu'entre l'expérience du laboratoire et celle du malade se place le facteur biologique particulier. Ce facteur est essentiel. Ne parlons donc pas de "résultats toujours excellents," puisque pour atteindre de pareils résultats il faut, en dehors de la valeur d'une technique spéciale, le coefficient biologique particulier indispensable. Or ces deux facteurs sont indépendants, on ne peut les confondre.

Monson a établi des lois concernant la théorie de la sphère. Voici les trois lois de Monson:

- 1o La surface articulaire dento-condylienne est sphérique, le rayon de cette sphère est de quatre pouces, soit 10,5 centimètres.
- 2o L'angle simphysaire mandibulaire est le même dès la naissance jusqu'à l'âge adulte.
- 3o La mandibule normale, dès la période foetale, est sous le principe du triangle de Bonwill. Les

asymétries proviennent de pertes de dents, de caries, d'habitudes vicieuses, etc.

George Villain a donné de cette théorie la définition suivante: "La surface articulaire des dents peut être comparée à deux calottes sphériques s'emboîtant l'une dans l'autre, et dont la face interne, concave, de la calotte inférieure mobile glisserait contre la face externe, convexe, de la sphère supérieure, qui est fixe." La sphère de Villain serait de 9, 8 centimètres.

Pour les adeptes de la théorie de la sphère, la sphère est donc le type idéal d'articulé et ce type doit servir de base à la confection des dentiers. Selon Monson, la théorie de la sphère représente le seul principe d'articulé susceptible d'établir des prothèses complètes et partielles équilibrées, d'annuler les composantes antérieures et de corriger l'asymétrie maxillo-faciale et mandibulo-temporale.

On trouve dans la théorie de la sphère trois classes d'articulateurs:

- (a) Les occluseurs: le stabiloccluseur de Villain, l'occluseur de L. Poullot.
- (b) Les articulateurs simplifiés: l'articulateur de Monson.
- (c) Les articulateurs adaptables: l'articulateur de Wadsworth.

La technique de la sphère passe par des phases d'évolution. Élémentaire avec les occluseurs, elle devient plus rationnelle avec l'articulateur de Monson, et enfin chez Wadsworth la sphère n'est plus qu'un moyen empirique qui conduira à la technique de l'enregistrement intra-buccal selon Paterson.

Considérée comme un dogme par certains de ses partisans, la sphère n'est plus qu'un moyen pour d'autres sphéricistes (nom donné aux partisans de la théorie de la sphère). Certains prothésistes

admettent que la sphère peut être utilisée comme un moyen susceptible de favoriser, mais non pas d'assurer, la stabilisation des *maquettes édentées* de cire ou de composition lors de la prise de l'articulé chez l'édenté. Ce moyen sphérique a été utilisé il y a longtemps par Gysi, qui l'abandonna pour des raisons théoriques et pratiques, car le moyen sphérique ne s'est pas révélé facile. Un moyen n'est cependant qu'un argument technique pour parvenir à une fin. Comme le docteur Paterson l'a démontré, les maquettes édentées d'articulé modelées selon le principe de la sphère sont toujours modifiées lors de l'enregistrement intra-buccal individuel de l'articulé. *La pratique a donc prouvé que la sphère n'était pas une base scientifique pour l'articulé édenté.*

D'autre part, les arguments théoriques et pratiques avancés contre la théorie de la sphère sont extrêmement nombreux. Voici quelques-uns de ces arguments.

A. Arguments de principe

1. Le principe de la sphère est contesté anthropologiquement même dans les bouches classiques (études selon les trois plans), recherches par la Columbia University, par l'Ecole de Bâle, Zurich, etc.
2. Les diverses théories de la sphère ne s'accordent pas entre elles.
3. Une surface sphéroïde ne peut être confondue avec une surface sphérique.
4. Les mouvements articulaires de latéralité et de propulsion sont impossibles avec deux calottes sphériques.
5. La ligne sagittale d'articulé en escalier s'oppose à la théorie de la sphère.
6. L'articulé ne présente jamais une surface globale simple. Il n'est pas possible de parler "scientifiquement" de la *surface articulaire* des dents, mais il faut parler des sur-

faces articulaires des dents. Lorsque ces dernières ne sont pas usées, l'articulé est composé de nombreuses petites facettes articulaires qui ont seules une valeur articulaire et fonctionnelle. Lorsque les dents sont usées l'articulé présente des faces occlusales abrasées dont l'orientation varie avec la même denture, orientation totalement opposée à la théorie de la sphère.

7. L'articulé usé n'est pas comparable à l'articulé non-usé.

B. Arguments concernant les axes

8. Les grands axes des dents ne sont pas le prolongement des rayons d'une sphère (résultats de recherches universitaires).
9. Les axes inter-alvéolaires de l'édenté ne dépendent pas de la sphère, mais du degré de la résorption alvéolaire de l'édenté.
10. Dans la plupart des dents l'axe coronaire ne correspond pas à l'axe radulaire.

C. Arguments concernant les surfaces articulaires

11. Les surfaces articulaires ne dépendent pas du centre d'une sphère, mais des axes de propulsion, de latéralité, etc.
12. L'abrasion des facettes articulaires est en opposition formelle avec la théorie de la sphère.
13. Ce ne sont pas les sommets des cuspidés qui importent dans l'articulé, mais ce sont les facettes des cuspidés, leur inclinaison, leur orientation, les sommets des cuspidés n'étant que les points d'intersection des facettes articulaires.
14. Fonctionnellement parlant, ce sont les crêtes d'émail qui importent, or les crêtes dépendent des facettes des cuspidés.
- 15a. L'étendue de la surface des facettes articulaires et leur inclinaison sont en relation étroite avec la puissance fonctionnelle et le dynamisme de la dent, facteurs ignorés par la théorie de la sphère.
- 15b. La théorie de la sphère exige une

morphologie dentaire qu'on ne trouve pas dans la nature.

D. Arguments concernant les courbes et lignes de l'articulé

16. L'articulé non-usé n'a pas de courbe sagittale, mais une ligne brisée d'articulé, seul l'articulé usé présente une courbe sagittale d'articulé, courbe qui est complexe si on l'étudie dès la région incisive. Il est donc scientifiquement inexact de parler de courbe d'articulé avec des dentures non usées.
17. La ligne sagittale de l'articulé édenté représente mécaniquement et dynamiquement la zone des pressions fonctionnelles. La zone des contrepressions est représentée par la ligne sagittale alvéolaire. Il y a interdépendance absolue entre ces deux zones. (Monsieur Pouillot en ignorant la valeur de la surface et de la topographie alvéolaire, ignore un des deux facteurs cardinaux de la dynamique des prothèses). (Je n'ai pas préconisé seulement deux sortes de montage des dents artificielles, voir mon livre "Denture et Dentiers Complètes", Masson, éditeur.)
18. Même dans les cas extrêmes, où la ligne d'occlusion sagittale des prothèses serait droite, les dents peuvent être inclinées selon le cône de sustentation de Robin. *La ligne sagittale n'est qu'une ligne de profil et non un plan.*

E. Arguments dynamiques

19. La résultante de la première prémolaire supérieure est typiquement vestibulaire et en opposition avec la théorie de la sphère.
20. Les composantes et résultantes des dents usées et non usées ne sont pas les mêmes, or la théorie de la sphère ne tient aucun compte de ces facteurs fondamentaux.
21. Avec la théorie de la sphère l'inclinaison des facettes des cuspidés et leur hauteur ne sont pas prises en considération, d'où omission des facteurs morpho-dynamiques.

F. Arguments concernant l'enregistrement intra-buccal

22. L'enregistrement individuel intra-buccal de l'articulé n'est pas possible d'après une sphère. (Pater-son, Gysi, etc., etc.)

G. Arguments concernant l'architecture mandibulo-crânienne

23. L'architecture mandibulo-crânienne ne peut pas être expliquée par la théorie de la sphère, théorie qui n'est qu'un petit fragment de la théorie des axes instantanés de rotation.

H. Arguments concernant les articulateurs

24. Remplacer l'articulateur par un occluseur c'est se supprimer toute possibilité technique du contrôle immédiat de l'articulé artificiel.
25. Les occluseurs ou articulateurs basés sur la sphère n'ont pas de valeur rationnelle si l'on emploie des dents artificielles cuspidées, cette remarque est aussi vraie si l'on emploie des dents sans cuspides.

I. Arguments concernant le montage des dents artificielles

26. Le montage selon l'axe inter-alvéolaire est en opposition avec le rétablissement intégral de l'articulé naturel, parce qu'un axe denté et édenté ne sont plus les mêmes.

27. Adapter en bouche des dents artificielles d'un dentier supérieure à un dentier inférieure terminé, ce n'est pas enregistrer un articulé individuel, mais enregistrer un articulé conventionnel déjà acquis, or l'articulé sphérique n'est ni physiologique, ni individuel.

28. Avec la théorie de la sphère, le facteur suroccclusion incisive disparaît et avec lui un des caractères physiologiques et esthétiques des plus importants.

La théorie de la sphère ne résiste donc ni à l'analyse théorique ni aux contrôles anthropologiques et techniques. Le problème de l'articulé trouve des explications incontestablement plus satisfaisantes avec la théorie des axes instantanés de rotation. Dans un article paru en juin 1935 dans la "Revue de Stomatologie" j'ai étudié les cinq facteurs fondamentaux de l'articulé et ses métamorphoses. J'ai conclu que c'est une erreur de confondre l'étude des articulés usés et non usés et je suis persuadé que c'est encore une plus grande erreur que de confondre l'étude de l'articulé naturel avec celle de l'articulé artificiel.

Rue du Rhône 33
Genève, Suisse.

UN CAS DE NEURALGIE FACIALE D'ORIGINE DENTAIRE A FORME ESSENTIELLE

par M. LEHMANS

Revue de Stomatologie, avril, 1935.

DANS le courant de l'année 1932-1933, le Dr M. Lehmann a eu l'occasion d'observer et de traiter avec succès deux cas de névralgies faciales dites essentielles, chez des sujets totalement édentés.

Nous rapportons un de ces cas.

En juin 1932, sur le conseil de son médecin traitant, Mme M——, cinquante

ans, vient nous consulter pour des douleurs névralgiques subintrantes localisées dans la région maxillaire supérieure droite. Interrogée, elle nous apprend qu'elle a commencé à souffrir d'une douleur lancinante de la gencive comparable à des coups d'aiguille, ayant duré pendant trois semaines au mois d'octobre 1931. Sans aucune thérapeutique, cette douleur

a disparu momentanément pour se renouveler ensuite par crises de courte durée, espacées d'abord, puis plus fréquentes.

A la fin de 1931, elle se décide à consulter un médecin qui lui ordonne aspirine et pyréthane qu'elle continue jusqu'à la fin de janvier sans obtenir d'amélioration.

Il lui reste alors une molaire inférieure droite déchaussée. Pensant qu'elle pouvait être en cause, elle va voir un dentiste. Cette dent ne présentant aucune lésion clinique importante en dehors de son déchaussement et de sa mobilité, les appareils de prothèse ne blessant la gencive en aucun point, il lui faut insister beaucoup pour que le praticien procède à l'extraction qu'elle désire. Traitée pendant une quinzaine de jours, la plaie se cicatrise normalement sans qu'il s'ensuive cependant une amélioration des douleurs névralgiques. Le dentiste lui conseille alors de consulter un oto-rhino-laryngologiste qui lui ordonne des comprimés dont nous n'avons pu faire préciser la nature. Souffrant toujours, elle va voir un médecin qui pratique dix injections intraveineuses de cyanure. Calmée momentanément, la douleur reprend ensuite plus vive et on lui fait de la diathermie. Celle-ci ne donnant aucun résultat, le médecin nous adresse la malade.

A l'examen, nous constatons que la bouche est totalement édentée, que les gencives ont une apparence absolument saine et que la douleur ressentie par la malade semble localisée à la fosse canine avec quelques irradiations vers l'oreille droite. Il n'existe aucune hyperesthésie au maxillaire supérieur, de même qu'au maxillaire inférieur, où cependant on constate la cicatrice normale et indolore de l'extraction.

Pensant toutefois qu'il pouvait exister là un foyer osseux enseveli sous une gencive saine, nous pratiquons une radiographie qui montre la trace de l'alvéole encore incomplètement calcifié. Les autres régions maxillaires donnant une image normale, nous proposons à notre malade d'ouvrir ce foyer cicatriciel et de le curetter. Cette intervention, suivie de lavages alvéolaires, amène une sédation totale des douleurs jusqu'au mois d'août. A cette époque, nous étions en vacances, et les douleurs récidivant, elle fait revenir le médecin qui l'avait vue la première fois. A nouveau, il prescrit pyréthane et injections de morphine sans résultat. Il fait des injections intramusculaires de muthanol, toujours sans amélioration. Il l'envoie alors à l'hôpital (début de septembre 1932) où le chirurgien lui fait faire deux séances d'air chaud; les douleurs augmentant, il pratique des injections d'alcool dans le voisinage de l'articulation temporo-maxillaire. Celles-ci, fort douloureuses, sont suivies, à partir de la troisième, d'un soulagement notable, sans que cependant les élancements aient disparu complètement.

La malade sort de l'hôpital fin septembre. L'amélioration persiste jusque fin novembre. A ce moment, les douleurs reprennent plus fréquentes et plus violentes. La malade retourne consulter le chirurgien qui lui fait à nouveau deux injections d'alcool fort douloureuses ne la soulageant pas et ayant pour seul effet de produire un trismus serré des mâchoires. Le chirurgien opine alors pour une résection du ganglion de Gasser.

Désespérée par ses souffrances intolérables et en proie à des idées de suicide, elle s'y résoud volontiers, mais son entourage, inquiet, lui fait consulter un médecin spécialisé dans la méthode du

Dr Gillet. Cette nouvelle pratique est sans résultat. Elle retourne encore une fois voir le chirurgien qui lui fait quatre nouvelles injections d'alcool suivies de douleurs atroces.

Sur les conseils du médecin qui nous l'avait adressée, elle revient nous voir, fin mars 1933. A ce moment, nous constatons le trismus et, au niveau de la région que nous avons curettée, un fin pertuis qui permet l'accès d'une sonde dentaire. La palpation du maxillaire supérieur où siègent toujours les névralgies est insensible. Il n'en est plus de même au niveau de l'angle du maxillaire droit. Dans le voisinage de cette région opérée, siège une hyperesthésie très nette déclenchante une crise douloureuse toujours irradiée vers la fosse canine droite. Aucun doute n'étant plus possible, nous pensons que là est la cause des douleurs et que la récédive qui avait suivi notre intervention résultait de l'insuffisance de curettage.

Nous faisons une nouvelle radiographie qui confirme notre diagnostic en montrant, à un examen très minutieux de l'image, un tout petit foyer osseux, dans le voisinage immédiat du canal dentaire d'une part et de l'alvéole curettée d'autre part. Nous décidons d'intervenir sur-le-champ sous anesthésie tronculaire et locale.

La muqueuse incisée et réclinée, nous réséquons la paroi alvéolaire externe; la brèche ainsi pratiquée et tamponnée permet de voir, dans le fond de l'alvéole, un pertuis dans lequel une sonde peut rentrer. Nous ouvrons ce trajet à la gouge et nous sommes conduit vers une petite cavité du volume d'un grain de blé, située profondément en arrière vers l'angle de la mâchoire. Cette cavité laisse échapper une masse sanguinolente

chargée de cholestérine. Son curettage a pour effet de déterminer une abondante hémorragie que nous nous employons immédiatement à juguler et qui nous fait penser à une lésion s'étendant au canal dentaire. En effet, le champ opératoire agrandi, nous y accédons aisément et nous l'ouvrons largement en arrière vers l'angle. Il n'est pas possible de dissocier vaisseaux et nerfs qui semblent pris dans un amas fibreux. Cette constatation nous fait remonter à un centimètre au-dessus de l'angle et toute la région ainsi mise à nu est curettée énergiquement; l'hémorragie est abondante et l'hémostase n'est obtenue qu'après un certain temps à l'aide de compresses imbibées de sérum Hémostyl. Nous laissons en place une petite mèche imbibée de sérum et suturons par ailleurs.

Nous laissons la mèche en place vingt-quatre heures. Son extirpation n'entraîne pas d'hémorragie, mais est douloureuse. Nous nous bornons ensuite à faire à l'aide d'une seringue des lavages quotidiens de la plaie à la Clonazone.

Les suites opératoires sont les suivantes: dans la première semaine, la plaie est douloureuse, mais la névralgie faciale a disparu; dans la seconde semaine, la plaie reste sensible et réapparaissent quelques douleurs névralgiques irradiées seulement du côté de l'articulation temporo maxillaire. L'examen de la plaie montre un bourgeonnement pathologique émanant de la profondeur. Nous le curettions immédiatement sans faire d'anesthésie; l'intervention est très bien supportée et nous procédons à un méchage que nous prolongeons quelques jours jusqu'au comblement de la plaie. (Nous avons fait faire un examen histologique des divers fragments curettés qui ont montré un processus d'ostéite fibreuse

sans signe de malignité.)

Dès lors, toutes douleurs névralgiques et opératoires ont complètement et définitivement disparu. La cicatrisation s'est effectuée normalement et il ne persiste que le trismus, combattu ensuite par la mobilisation du maxillaire inférieur au moyen d'un ouvre-bouche.

Actuellement, en décembre 1934, la malade porte ses appareils de prothèse, s'alimente normalement et n'a plus jamais ressenti de douleurs.

CONCLUSION du DR LEHMANS

Le diagnostic causal de la névralgie faciale, déjà difficile chez un malade non édenté ou édenté partiel, l'est bien davantage chez l'édenté total; dans ce lésion l'élément dentaire manquant, la lésion maxillaire, qui est le plus souvent minime, peut passer inaperçue même à la radiographie. De plus, le siège des douleurs n'est pas toujours en rapport avec le siège de la lésion causale. Un signe clinique est cependant capital et permet, lorsqu'on le trouve, de localiser le territoire dentaire où peut se trouver la lésion: c'est l'hyperesthésie gingivale

qu'il convient de rechercher toujours. Lorsque la lésion se révèle nettement à la radio, la conduite à tenir est simple: il faut procéder à son éradication totale. Si, au contraire, l'image radiographique ne montre aucune lésion, il ne faut pas oublier que la névralgie faciale peut être déterminée par une irritation minime, mais chronique, d'un nerf (foyer d'ostéite, condensation osseuse, névrite, névrome, etc. . .), et que le siège le plus fréquent de ces lésions irritatives réside au niveau des régions dentaires. Toutes lésions nasales, sinusales, otiques, éliminées, c'est à elle qu'il faut immédiatement songer en l'absence d'infection (syphilis, tuberculose, encéphalite, etc. . .) ou d'intoxication déterminée, avant de conclure à une névralgie faciale essentielle. La thérapeutique chirurgicale doit au moins viser à la séparer de ses connexions nerveuses centrales. La résection du nerf dentaire inférieur au niveau de l'angle de la mâchoire nous paraît être l'intervention de choix parce que facile, bénigne et efficace, pour isoler des lésions siégeant sur une branche horizontale du maxillaire inférieur.

L'AMALGAME

Son histoire—sa composition

J. ARTHUR RENAUD, D.D.S., Montréal.

QUI oserait, nier, que l'amalgame est encore l'obturation la plus répandue de tous nos travaux dentaires journaliers? L'amalgame a sauvé le plus grand nombre de dents et a par conséquent rendu à l'humanité souffrante les plus grands services. Fait étrange et regrettable à constater c'est aussi l'obturation la moins bien exécutée. Cependant, sa durée moyenne est étonnante, en dépit d'une technique trop souvent défectueuse

pour sa mise en place et négligemment appliquée. Quels succès n'obtiendrions-nous pas en améliorant un tant soit peu notre technique? Point n'est besoin de dissenter longtemps pour prouver cette assertion. Un simple coup d'oeil, miroir et explorateur en mains, dans les bouches où abonde ce genre d'obturation, suffit à nous mettre tous d'accord sur ce point.

Prétendre que l'amalgame renferme toutes les qualités d'une restauration-

idéale, serait aller trop loin, mais il faut bien lui en reconnaître d'appréciables, puisqu'il a franchi cent trente années de vie et se porte de mieux en mieux. Pour bien comprendre les causes de sa survivance et la nouvelle technique qui nous permettra d'enrayer les raisons de son insuccès, repassons toute son histoire; peut-être alors l'aimerons-nous davantage et serons-nous convaincus de son efficacité.

Nous savons qu'avant son invention on employait un alliage de plomb, de bismuth et d'étain qui, fondu à cent degrés c., était coulé au moyen d'une cuillère dans la cavité de la dent. On ne semble pas être d'accord sur l'auteur de cette découverte. Les uns disent que ce fut W. Pepys, d'autres d'Arcet; un nommé Regnart l'aurait employé pour les mêmes fins. C'était donc un métal fusible qui réparait les dents cariées au commencement du siècle dernier, vers 1805 à 1817. Avouons que ce n'était pas fameux. Tout de même, cet événement mit en branle les facultés d'observation de quelques cerveaux ingénieux, tel Regnart, qui conçut l'idée de mélanger dix parties de cet alliage avec du mercure. Cette nouvelle formule avait abaissé notablement son point de fusion, tout en lui donnant une plasticité jusqu'alors inconnue, sans l'aide de la chaleur. Deux belles victoires qui donnèrent naissance à l'amalgame d'aujourd'hui.

Vers 1819 un nommé Bell se mit à fabriquer et à vendre aux dentistes de son temps, un alliage d'argent qui devait être rendu plastique par du mercure. Un Français du nom de Taveau s'en serait servi en 1826. A cause des impuretés de ce métal, on lui substitua plus tard la monnaie d'argent que l'on pulvérisait au moyen de la lime. A cette époque c'était le seul procédé connu et répandu dans

toute l'Europe pour obturer les dents cariées.

Vers 1833, deux frères du nom de Crawcourt, français d'origine, ne connaissant rien de la dentisterie, personnifiant le type le plus parfait du charlatan, décidèrent d'aller faire fortune en Amérique en y introduisant le nouveau mode d'obturation mis en pratique dans leur pays. Ils donnèrent à leur substance obturatrice le nom mirobolant de "Succédané minéral royal". Ils l'annoncèrent avec tant d'éclat qu'en très peu de temps, ils attirèrent à New York dans leur bureau spacieux, luxueusement meublé, une clientèle des plus lucratives. Ce fut pour ces aventuriers un succès merveilleux.

Les dentistes américains, partisans de l'aurification, seule obturation connue dans le temps, s'inquiétèrent de la tendance de leurs clients à se diriger chez les Crawcourt, où l'on rendait, à meilleur compte, des services professionnels douteux.

Ces deux pseudo-dentistes firent tant d'abus de cet amalgame, qu'ils ne tardèrent pas à mériter la déconsidération des membres de la profession dentaire américaine et à perdre la confiance de leurs clients. Ceci entraîna, par la suite, la condamnation de tout matériel contenant du mercure. Une guerre inexorable fut déclarée contre tous ceux qui employaient dans leurs bureaux cette pâte minérale, que l'on ne se gênait pas de qualifier d'anti-professionnelle. C'était en 1841.

Quatre ans plus tard, lors d'une assemblée tumultueuse de "l'American Society of Dental Surgeons," ses membres votèrent une résolution, par laquelle ils s'engagèrent à ne plus employer d'amalgame comme obturation. Ceux qui ne

voulurent pas signer ce certificat furent expulsés de la Société. Il fut aussi décidé, séance tenante, d'en aviser le public. Cette mesure fit durer quinze longues années cette malheureuse guerre, pendant laquelle les partisans de l'amalgame ne voulurent lâcher prise. Ils continuèrent d'obturer toutes dents inaccessibles à l'aurification plutôt que de les enlever. Cette lutte se termina vers 1856 par la mort de la Société qui l'avait déclanchée.

Les partisans les plus convaincus de son utilité entreprirent des recherches qui apportèrent, par l'addition de l'étain, deux grandes qualités nouvelles; une plasticité plus grande et un retardement dans sa prise. C'en fut assez pour affermir la confiance ébranlée et généraliser son emploi chez les dentistes. Quelques restaurations furent trouvées si satisfaisantes par cette nouvelle formule, que les plus intrigués se mirent à chercher les causes de cette amélioration. Ces investigateurs furent: Tomes, Fletcher, Hitchcock, Witzel et Flagg. Ce dernier, qui fut vers 1873, l'un des plus grands défenseurs de l'amalgame, fit pendant longtemps des expériences, pour prouver qu'il possédait la propriété de sauver les dents, et qu'au lieu d'être dangereux, comme on l'avait prétendu durant la guerre intense déchainée contre lui, il possédait l'avantage de remplacer l'aurification dans bien des cas. Ce fut l'époque des amalgames dominés par l'étain, erreur qu'il corrigea en 1881 avec sa nouvelle formule:

PARTIES

Argent—60

Etain— 35

Cuivre— 5

Vint ensuite le dernier, mais non le moindre de cette phalange de dentistes éminents; le savant Docteur G. V. Black.

En 1895 cet homme remarquable entreprit la tâche, gigantesque d'étudier à fond le problème non encore résolu de l'amalgame. Aidé sans doute par les recherches de ses prédécesseurs, il partit du fait acquis que l'argent et l'étain devaient servir de base à toute formule d'amalgame dentaire. Il traita ces deux métaux de toutes les façons possibles, enregistrant ses résultats au moyen d'instruments scientifiques d'une grande précision. Au besoin, il créait de toutes pièces de ces instruments. Après avoir expérimenté sur presque tous les métaux connus susceptibles d'apporter des qualités appréciables, il vint à la conclusion que les seuls modificateurs recommandables étaient le cuivre à 5% et le zinc de 1 à 2%. Il avait trouvé la formule balancée ou compensée de l'amalgame d'aujourd'hui. Satisfait de ses investigations, il invita les manufacturiers dentaires à prendre avantage de ses laborieuses recherches dans des cours qu'il leur donna à Chicago.

Il est donc plausible de croire que seuls les alliages fabriqués d'après les méthodes de G. V. Black sont ceux que l'on peut qualifier de haute qualité. Les métallurgistes du "Standard Bureau of Research of Washington" répétèrent probablement les mêmes expériences et en vinrent pratiquement à la même conclusion, à quelques minimes exceptions près, lorsqu'ils publièrent les quantités requises de chaque constituant de l'amalgame, dans un rapport qu'ils intitulèrent "Federal Specification 356" et qui se lit comme suit:

Parties:

Argent—64 à 70

Etain— 26 à 29

Cuivre— 3 à 6

Zinc— 0 à 2

Maintenant que nous connaissons l'his-

toire de l'amalgame, parlons de ses constituants, de leurs fonctions, de leurs qualités et de leurs défauts.

ARGENT

Ce métal à l'état pur est le plus blanc de tous les métaux et peut obtenir un éclatant poli, nous dit Félix Robin, un grand métallurgiste français. Ses principales qualités sont: blancheur et dureté, et son grand défaut: la dilatation. Sa proportion ne doit jamais être moindre de 64% jamais plus de 70%. Il hâte la prise de l'amalgame et est la cause d'une crépitation que l'on perçoit durant sa cristallisation.

ETAIN

C'est le second en importance des constituants de l'alliage. C'est un métal mou, facile à rayer et d'une très grande affinité pour le mercure. Ses fonctions seraient donc de favoriser l'amalgamation, de retarder la prise et d'aider à garder la blancheur. Mais il a aussi ses défauts qui sont ceux de changer de forme et de se contracter. Sa proportion minimum est de 26% et maximum de 29%.

CUIVRE

C'est le troisième constituant de l'alliage. Son pourcentage minimum est de 3% et maximum de 6%. Ce qui le rend inappréciable, c'est prétend-on qu'il n'a aucun défaut. Allié aux autres métaux il leur communique cette disposition particulière. Ses principales fonctions seraient de contrôler la dilatation de l'argent et la contraction de l'étain, d'allonger la durée de la plasticité et enfin de contribuer à la dureté. Les alliages qui contiennent plus de 6% de cuivre ne gardent pas la couleur argent.

ZINC

Dernier constituant de la formule

compensé ou balancé de G. V. Black. Il ne doit jamais dépasser 2%. C'est un métal très difficile à traiter à cause de ses impuretés: l'arsenic et l'antimoine. La moindre trace de ces impuretés peut affecter la plasticité de l'amalgame et le rendre instable. On a prétendu qu'il était responsable d'une action galvanique désagréable, mais le département du "Standard Bureau of Research of Washington" a détruit cette fausseté. Il contribue dans une large mesure à la dureté et à la blancheur de l'amalgame et aide aussi à contrôler sa plasticité.

L'on comprend maintenant pourquoi les formules d'aujourd'hui contiennent tous ces métaux appelées: alliage "balancé" (balance alloy).

Ces métaux sont fondus dans les proportions données en une composition eutectique, mis en lingots et finalement réduits en copeaux ou en limailles. Les copeaux ont 1/2500 de pouce d'épaisseur, ce qui leur donne les qualités de plasticité et d'adaptation. Les limailles réduites à 1/800 de pouce d'épaisseur ont une dureté plus grande. Le traitement final consiste à soumettre à la chaleur, pendant un temps donné, copeaux et limailles. C'est les vieillir pour les rendre stables.

Quelques manufacturiers dentaires ont des laboratoires de recherche, à la tête desquels se trouvent des métallurgistes compétents et où l'on travaille constamment. Finiront-ils par trouver un alliage comparable à l'or et moins dispendieux? On ne sait jamais.

J'aborderai dans un prochain article, la partie la plus importante: la technique du malaxage de l'amalgame et de son insertion.

332 rue Ste-Catherine est,
Montréal.



*Be noble;
and the nobleness that lies
In other men,
sleeping, but never dead,
Will rise in majesty
to meet thine own.*

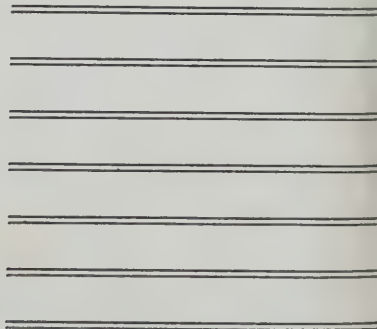
—WHITTIER.





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THE INFLUENCE OF SALIVARY AMMONIA IN DENTAL CARIES

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THE chemical study of saliva has received only limited consideration in the investigation of dental caries. Saliva is one of the most complex fluids of the body, yet little is definitely known of its chemical character.

In our studies we have found a very definite variation in the ammonia content of saliva in immune and susceptible mouths. Ammonia is present in much greater concentration in saliva of immune individuals than of susceptibles. Not only is the ammonia significantly related to immunity and susceptibility, but it is possible to control the quantity by dietary regimentation.

Since no systematic investigations of ammonia in saliva have been reported, it has been necessary to chart the findings of immune and susceptible individuals and establish a dividing line between the two groups. The ammonia content of saliva of caries susceptible has been found to vary from nil. to about 7 mgs. per 100 c.c. In the saliva of caries immune the ammonia content varies from about 8 mgs. to as high as 20 mgs. per 100 c.c. We have therefore established an arbitrary point between 7 and 8 mgs. as the division between caries susceptible and immune individuals. In the group whose ammonia content is between 7 and

8 mgs. the diagnosis has been difficult, that is, they are neither absolutely immune nor susceptible. The following chart shows some typical ammonia values in the groups taken from over 150 cases:

It will be noted that pH is not significant. Our purpose in taking the pH was that we felt ammonia should be in alkaline form to be effective. Explanation will be made later.

The analysis was made with saliva activated by chewing paraffin. The pH was determined colourimetrically, using Brom-thymol-blue as the indicator. The Permutit method (Folin and Bell) was used for the ammonia determination. Analysis was always made immediately after the collection of saliva to obviate an increase of ammonia due to putrefaction.

These findings lead us to believe that ammonia is a controlling influence in dental caries. The role that ammonia plays in the saliva is not clear. Plaque formation has been widely accepted as the primary factor in dental caries, therefore the action of ammonia to prevent or remove plaque might explain its value in maintaining immunity. Tests were made to determine the solubility of salivary mucin in ammonia solutions. Saliva was treated with acetic acid to precipitate



CARL J. GROVE

filtrate tested for protein by the Xanthoproteic method. The following shows the relative solubility of the solutions:

We have also observed that there is a difference in the physical character of saliva with a high ammonia content, than with low ammonia. Saliva with high ammonia is more watery and less stringy, than saliva with low ammonia. These are of course mere observations without scientific basis. Extensive work on the specific gravity and mucin content should

mucin. The mucin was washed free of acid and shaken for one minute in various solutions. This was filtered and the

CARIES SUSCEPTIBLE		CARIES IMMUNE	
pH	AMMONIA N.	pH	AMMONIA N.
7	4.3 Mgs.	7.2	11 Mgs.
7.4	6.50	7.2	7.5
6.8	5.30	7.2	8.00
7.2	2.14	7.4	10 Mgs.
7.4	2.6	7.2	10.5
7.4	6.00	7.2	8.80
7	2.14	7.4	14.9
7.4	4. Mgs.	7.2	11.00
7.2	5.10	7.4	8.60
7.2	5.50	7.2	11.00
7.2	2.2	7.4	13.00
7.2	4.70	7.4	9.50
7.4	5.00	7.6	11.10
7.2	nil	7.4	20.00
7.2	.4 Mgs.	7.4	13.50
7.2	1.5 Mgs.	7.2	10.50
7.2	nil	7.4	9.50
7.2	6.4	7.2	8.00
7.2	4.70	7.4	8.00
7.2	5.00	7.4	11.00
7.2	6.00	7.4	16.00
7.2	5.50	7.6	20.00
7.4	4.00	7.1	8.00
6.8	2.50	7.2	8.24
7.1	1.35	7.2	10.50
Note pH not an indication of susceptibility or immunity	Note low ammonia in caries susceptible	Note pH not an indication of susceptibility or immunity	Note high ammonia in caries immunes

The Influence of Salivary Ammonia in Dental Caries

The relative solubility of salivary mucin in different solutions as estimated by the Xanthoproteic test for protein.

	SOLUTIONS	PER CENT OF SOLUTIONS	SOLUBILITY
1.	Ammonium Hydroxide	1%	Soluble
2.	Ammonium Hydroxide	.005%	Soluble
3.	Ammonium Carbonate	1%	Soluble
4.	Sodium and Ammonium Phosphate	1%	Slightly Soluble
5.	Ammonium Phosphate	1%	Slightly Soluble
6.	Calcium Chloride	1%	Slightly Soluble
7.	Ammonium Phosphate	1%	Slightly Soluble
8.	Ammonium Chloride	1%	Only slightly soluble.
9.	Ammonium Acetate	1%	Not soluble
10.	Ammonium Oxalate	1%	Not soluble
11.	Distilled Water		Not soluble
12.	Sodium Hydroxide	N/100	Soluble.

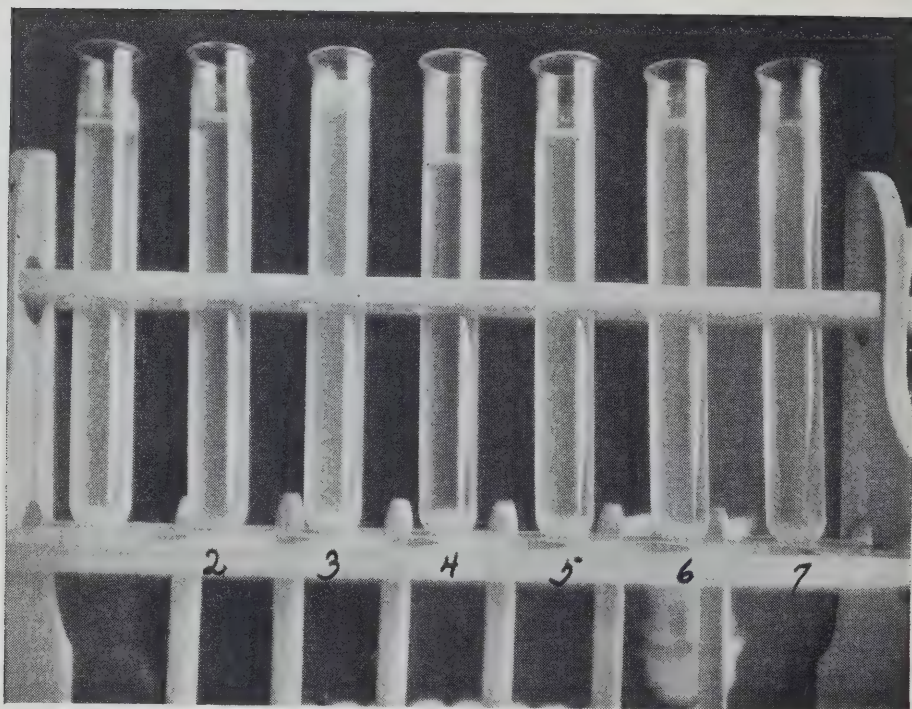
Solutions in order of their efficiency.

be done. The following photograph shows the effect ammonia has on the physical character of saliva. 5 c.c. of saliva from susceptible was placed in each of 7 test tubes; to each tube was added a different reagent and left over night. To No. 5 distilled water was added, note the cloudy appearance with sediment adhering to the walls of the test tube. In No. 4 ammonium hydroxide was added, note the clearness of the saliva with no sediment on the walls of the tube. The

other tubes contain acid ammonium salts with the appearance much like the one with saliva and water.



CARL T. GROVE



The Influence of Salivary Ammonia in Dental Caries.

Diet in the control of dental caries is probably the most important advance the profession has ever made. In the past few years great strides in nutrition have been attained by many groups in various sections of the country. While credit for the control of caries has been attributed to different food elements by the investigators, all of the diets are fundamentally the same.

A carefully balanced diet with the addition of vitamins is the basis of most of the caries controlling dietary regimens. Many also stress the importance of keeping the diet on the alkaline side. To determine the effect of these diets in the production of salivary ammonia we placed patients on acid and alkaline ash diets. The alkaline diets increased the

ammonia content of the saliva, while acid producing diets lowered the ammonia content. The explanation for this is difficult. We do not know from what source ammonia in the saliva is derived. It is presumably produced from urea, broken down into ammonia by enzymic action. The urea content of the saliva has been found to be fairly stable, paralleling the urea content of blood (Hench). If one examines the caries controlling diets, it will be found that they contain an abundance of alkaline ash foods. The exact effect of these foods in the control of caries has not been given, but from our observations we are led to believe that the resulting increased ammonia is of great importance. Jones and Prichard working in Hawaii have

The Influence of Salivary Ammonia in Dental Caries

found that natives living on the primitive diets (high alkaline ash foods) are free from caries, while those who have adopted the civilized, refined foods (high acid ash) have become very prone to the disease. The subject of nutrition in dentistry must receive greater consideration, and it behooves every dentist to become thoroughly familiar with the subject and make application of this knowledge.

Because of our work on the ammonia content of saliva published in the October, 1934, *Cosmos*, Drs. White and Bunting of the University of Michigan have checked our findings by an ammonia determination method, other than the one used by us. Their findings were entirely different. According to their report appearing in the March A.D.A. there is no correlation between the ammonia content of saliva and dental caries. The method used by them involves areation. Saliva was treated with a saturated solution of sodium carbonate, releasing ammonium carbonate. This was then blown over into a tube containing a standard acid, for two hours and the contents titrated for the estimation. We have since verified findings by their method. While both methods are for the determination of ammonia, entirely different results are obtained. This is difficult to explain. The fact remains, however, that saliva treated by the permutit method shows ammonia N. values which are significant for caries susceptible and caries immune cases, not disclosed by the method used by White and Bunting.

Saliva is a complex chemical fluid, and it is highly probable that permutit extracts nitrogenous substances, not obtained by other methods.

We conclude from our investigations

that ammonia or another nitrogenous substance closely related, is an important constituent of saliva for the control of dental caries, and that it is entirely within one's scope to control dental caries by dietary means.

The permutit method (Folin and Bell) as used for our investigations is unsuitable for general office practice because of expensive equipment involved. We have therefore modified the technique so that an approximate estimate may be obtained with a minimum of equipment.

The materials necessary are as follows:

EQUIPMENT.

2—100 c.c. volumetric flasks.

1—25 c.c. graduate.

1—2 c.c. pipette.

6 test tubes. Measure 2 c.c. water in one or two of the test tubes and mark the top of the water on the tube with a stone or disk. Use for measuring the saliva for analysis.

CHEMICALS.

Standard stock solution. Ammonium sulphate. Dissolve 0.47165 gm. C.P. ammonium sulphate in one liter of distilled water. This solution is a stock solution to be kept in a dark bottle and in a dark place. The working standard is made from this for each test as given in the procedure.

12 ounce bottle of Nessler's reagent.

One pound of Permutit powder.

One liter 10% solution sodium hydroxide.

PROCEDURE.

Place about 2 gm. permutit powder in one of the 100 c.c. volumetric flasks. Add 5 c.c. of water and mix.

Add 2 c.c. saliva, shake gently but constantly for 5 minutes. Rinse powder from sides of flask and decant, leaving all the powder in the flask. (25 to 40 c.c. water.)

Wash powder with about 50 c.c. water and again decant, leaving all the powder in the flask.

Add a little water to powder and then add 5 c.c. 10% sodium hydroxide solution, shake and add about 75 c.c. distilled water.

At this point prepare the working standard as follows: Mix .7 of a c.c. of the standard stock solution in 50 c.c. distilled water. Mix thoroughly. Take 10 c.c. of this solution and place in the other 100 c.c. volumetric flask. Add 5 c.c. 10% sodium hydroxide solution. Mix.

Fill flask three-quarters full of distilled water and mix.

To each flask add 10 c.c. Nessler's reagent. First give the flask a swirl and slowly add the Nessler's reagent. The colour obtained in the flask containing the standard is the same as would be obtained from saliva containing $7\frac{1}{2}$ mgs. ammonia N. per 100 c.c. As stated previously in the paper we have made an arbitrary division of susceptibility and immunity between 7 and 8 mgs.

The colour in the flask in which saliva has been estimated is now compared

with the colour of the flask containing the standard. If the colour is darker than the standard, immunity exists. If the colour is weaker, susceptibility is present.

Ammonia free distilled water must be used for all estimations.

This technique is essentially the same as used in our investigations except that in this the colourimeter is eliminated. We believe, however, that fairly accurate conclusions may be drawn by this procedure.

SUMMARY

Ammonia is present in greater concentration in immunity than in susceptibility.

Salivary ammonia can be controlled by dietary regimentation.

P.H. is not indicative of either immunity or susceptibility.

The controlling influence of ammonia in caries is its property of dissolving plaques.

Diets of an alkaline ash increase the ammonium content of the saliva.

Diets of an acid ash decrease the ammonium of the saliva.

The diets reported which control caries are of an alkaline ash.

1045 Lowry Medical Arts Building.

MOUTH BREATHING

WHILE most parents are vaguely aware that mouth breathing is bad for a child, they do not always fully realize just how potent a factor it is in the production of malocclusion. This should be pointed out to them at the earliest opportunity, and definite advice given to them as to the best means of overcoming it. Firstly, they should be advised to consult a nose and throat specialist to make certain that these important associated structures are in a healthy condition. If this field is clear, the next step is to supply some artificial support to the lower jaw, keeping it in its natural

position until the muscles become trained to hold it. A child may possibly, by mental effort, overcome the trouble during the day, but at night, when the subconscious mind asserts itself, the jaw will fall open. Thus it is at night that the support is most necessary, and may best be given by the use of an aluminium chin cup and head strap, or by placing strips of transparent sticking plaster over the corners of the mouth. In this position it leaves sufficient of the mouth free to prevent the child feeling suffocated.—K. T. ADAMSON, in *Australian Journal of Dentistry*.

ORAL FOCAL INFECTION AND ITS RELATION TO SYSTEMIC DISEASES*

by EMERY JONES, D.D.S., New Westminster, British Columbia.

ALTHOUGH this paper deals more particularly with the investigations and conclusions of recent years, the relation of focal infection in or about the teeth to ill health has been known to some extent for centuries. An article published in Philadelphia in 1818 by Benjamin Rush, one of America's foremost physicians of that day, is worth quoting. This article was written before the discovery of bacteria, at a time when the knowledge of pathology was meagre, and yet it harmonizes in its essentials with the more popular views of the present day. The article is entitled "Medical Observations", by Benjamin Rush, M.D., Professor of the University of Pennsylvania, and reads as follows:

"Some time in the month of October, 1801, I attended Miss A. C. with rheumatism of the hip joint, which yielded for a while to several of the remedies for that disease. In the month of November it returned with great violence, accompanied by severe toothache. Suspecting the rheumatic affection was excited by the pain in her tooth, which was decayed, I directed it to be extracted. The rheumatism immediately left her hip, and she recovered in a few days. She has continued ever since to be free of it." He mentions two other cases—one of epilepsy and the other of dyspepsia, and concludes as follows: "I have been made happy by discovering

that I have only added to the observations of other physicians, in pointing out a connection between the extraction of diseased teeth and the cure of general diseases."

In spite of this early knowledge it is only during the last twenty years that this subject has had the attention that it deserves.

I believe a paper of this kind can be made most helpful by reviewing and analyzing the evidence now existing regarding pulpless and infected teeth and the surrounding tissues of the oral cavity. I have no laboratory findings of my own, so I give you the consensus of opinion of those who have had the opportunity, providing those findings are borne out by the clinical findings of myself and other practical men.

A focus of infection may be defined as the circumscribed area of the tissue infected with pathogenic micro-organisms. Foci of infection may be primary or secondary. Primary foci usually are located in the tissues communicating with a mucous or cutaneous surface. Secondary foci are the direct results of infection from other foci through contiguous tissues, or at a distance through the blood stream or lymph channels.

Primary foci of infection may be located anywhere in the body. Among the more common locations are the alveolar process, teeth and jaws, the fauces

*Presented before the Fraser Valley Medical Association and also the Vancouver Dental Society.

and nasopharynx, the tonsils, and the mastoid, maxillary, and accessory sinuses.

There are three distinct types of apical alveolar infection about the teeth: the acute; the chronic with a sinus discharging through the mucous or elsewhere; and the chronic without a sinus, usually called the blind abscess or the granuloma, and for convenience I will use these popular terms in this paper, although I am quite aware of using faulty nomenclature. An abscess is a localized collection of pus in a cavity of the body. Blind apical infections usually are not purulent; in fact, the ever-present streptococcus viridans is not a pus-producing organism (Billings). Granuloma is also a misnomer, for the granulation tissue about the apex of an infected tooth root is not a tumour in any sense of the word.

EVIDENCE

First let us answer the much asked question: "What evidence have we that oral focal infection may cause systemic disease?" I will attempt to answer by quoting from some of our best research workers.

Frank Billings, M.D., with many of his colleagues in the Rush Medical College, affiliated with the University of Chicago, has made an exhaustive study during the past twenty years of the focal infection theory. These are some of his conclusions: "Appendicitis is usually caused by a strain of the streptococcus from mouth or throat focus. Cholecystitis may also be caused by a streptococcus infection from a focus of the head . . . The frequent relation of pyorrhoea to rheumatic fever, heart disease, nephritis, and other acute local and general infections has probably not been given the aetiological importance it deserves . . .

The primary focus of acute rheumatic fever, endocarditis, chorea, myositis, glomerulonephritis, peptic ulcer, appendicitis, and chronic deforming arthritis, is usually located in the head, and usually in the form of alveolar abscesses, acute and chronic tonsillitis and sinusitis."

Dr. Charles Mayo has had long years of intensive study and an unusual opportunity for observation. He is quoted in the "Lancet" (June 13, 1925) as stating in a London address: "In America there has recently been a tremendous increase in heart disease and in infections, and post mortem examinations seem to show that much of this is fundamentally due to the teeth." In a paper read at Dallas, Texas, November, 1924, he further states "Sickness and death from acute chronic infections (those bacterially caused) account for 87 per cent of all deaths." He further states as follows:

"The specific microbe of most diseases is known, and even if the microbes are unidentified we know their method of work and can develop vaccines and serums to prevent or limit their destructiveness. The hardening of the blood vessels, the changes in many chronic brain lesions, disseminated sclerosis of the spinal cord, chronic nephritis, stones in the kidney, ureter, and bladder, the recurring rheumatism of muscles and joints, large and small, the chronic recurring diseases of the eye, iritis, retinal and choroidal troubles, and neuritis, are some of the more common diseases that we now know to be due to infections. Investigations have proved that those who suffer from these carry a focus that, with varying degrees of health, exhaustion, or even climatic changes, may afford an excellent opportunity for the bacteria to be thrown into the blood

Oral Focal Infection and Its Relation to Systemic Diseases

stream and create a recurrence of those diseases which in the past were treated as entities; primary, not secondary, as we now consider them.

"The greater percentage of such infective foci are in the mouth. Small closed alveolar marginal pockets and abscesses at the roots of devitalized teeth all afford opportunities for infection, with the break in health that must eventually come to all. They may locate in the heart and thus add to the high and still growing death rate from heart disease—150 deaths in 100,000 occurring from this cause each year in this country."

Robert H. Buck, M.D., of Chicago, describes various eye diseases that may be attributed to infected teeth. He says: "Dental infections have been definitely shown to be aetiologic factors in many inflammatory eye lesions and in obscure ocular diseases. Tonsillar infections are probably the most frequent cause of iritis. *Infected teeth rank as a close second*, while syphilis is relegated to third place."

Edward C. Rosenow, M.D., of the Mayo Clinic of Rochester, Minnesota, has proven the theory of elective localization of micro-organisms. He has shown that because of varying grades of oxygen pressure, streptococci, within a focus of infection, change their virulence and other properties and acquire an elective affinity for certain tissues and organs, while streptococci, growing under aerobic conditions, do not acquire these properties. (e.g. *Streptococcus viridans* on the membranes of the oral cavity is quite harmless, but in the apical tissues about a tooth under anaerobic conditions, or in a heart muscle, it may be very virulent.) In animals, depending on the strain he uses, he can produce appendicitis, chole-



EMERY JONES

cystitis, or ulcers of the stomach almost at will by injecting intravenously certain strains of streptococci from the *teeth or tonsils* into the blood stream.

B. S. Kline, M.D., and S. S. Berger, M.D., of Cleveland, Ohio, have made a careful study of pulmonary conditions, and their conclusions, in speaking of *pulmonary gangrene*, follows: "Recent observations give evidence that this very serious and usually fatal disease of the lungs is produced by the presence of mouth spirochetes and fusiform bacilli (so commonly found in Vincent's infection) and that its prevention is possible by proper oral hygienic and therapeutic measures."

Sir William Willcox and Dr. Beddard, of England, state: "Ninety per cent of the cases of non-specific infective arthritis are due to the infections arising from the teeth."

In the dental profession no man has had greater influence in moulding opin-

ion than has Weston A. Price, D.D.S., of Cleveland, Ohio. He was chairman of the research section of the American Dental Association for many years. For over twenty-five years he carried on exhaustive experiments in his research laboratories in Cleveland, and has written two text books of over 1,200 pages each on "Dental Infections and the Degenerative Diseases". In the famous Buckley-Price debate in Chicago a few years ago, on the subject "Resolved that practically all infective pulpless teeth should be extracted", the outline for the affirmative was as follows:

1. The present very high death rate from degenerative diseases is due in part to the unwise treatment and retention of infected pulpless teeth.
2. It is so difficult as to be practically impossible to sterilize infected cementum in the mouth.
3. The new evidence from blood chemistry reveals that toxic substances from infected teeth can, and do, destroy the body.
4. I believe that practically all infected pulpless teeth should be removed.

HOW IS DISEASE CAUSED?

Now, gentlemen, with this array of evidence from the best authorities that oral focal infection *does* cause systemic disease, the next question we might naturally ask is, "How does it cause those diseases?"

Systemic infection from a primary focus is usually carried in the bloodstream. In addition, the infectious micro-organisms may pass from the focus to other tissues through the lymph channel and lymph nodes.

The most common micro-organisms found at the apices of infected teeth is

streptococcus viridans. This organism, according to Rosenow, may be converted into any of the other types of the members of the *streptococcus pneumococcus* group. Let us take, for example, *streptococcus viridans* endocarditis, a usually fatal disease. According to Frank Billings, "the focus of infection which undoubtedly causes the *streptococcus viridans* bacteriemia and chronic malignant endocarditis is often an alveolar abscess."

"This disease is characterized by growths of massive vegetation upon the valves of the heart; but as the organism is not pus-producing, suppuration seldom follows. And so with other diseases—it is a short journey through the blood stream from the oral cavity to the most remote parts of the body."

Since the above research workers have seemed to prove that many serious and fatal diseases are traced to the foci of infection in the oral cavity, let us next carefully analyze whether there is any weak link in their chain of evidence, or if we have sufficient data for our diagnosis of the cause of these systemic diseases. The correct diagnosis of the cause of such serious and often fatal diseases as have been mentioned is so important that we must take great care that that diagnosis is absolutely correct. Then let us analyze our present methods. One of the most useful and most depended on as an assistant in diagnosis is the roentgen ray.

ROENTGEN RAY EVIDENCE

Fifteen years ago the pendulum swung far over, as it often does when a new theory has been proved. Many physicians and dentists went to the extreme of advising the removal of every devitalized

tooth, and every tooth with a large filling or with a gold crown. Then a little more conservation followed, and those teeth only were condemned that showed a rarefied area about the apices, or that had an exudation of pus (or finely desiccated food) from the gingivae under pressure of the finger. Of more recent date, Hayden has proved: 1. A very high percentage of teeth that are negative with the roentgen ray test harbour infection; 2. A fairly high percentage of teeth that are positive with the same test did not harbour infection, or sufficient infection to be a factor in systemic disease at the time the culture was made. In such cases the infection has probably run its course and become bacteria free, as happens in infections elsewhere in the body.

Dr. Rosenow also confirms the same idea in these words: "The Roentgen-ray negative tooth may harbour streptococci that have a higher degree of specific invasive power than those isolated from pulpless teeth in which marked rarefaction is apparent." Of course, we all know that the typical walled-off granuloma is less dangerous than the diffusing type.

Weston A. Price sums up the limits of the roentgen-ray as follows:

1. Roentgenograms do not reveal infection, and may or may not reveal its effects.

2. The extent of the absorption does not express the extent of the infection.

3. An area of absorption of the supporting tissues at the apex of a tooth, or laterally to it, may not be disclosed because of any of the following conditions (a) being hidden by another root of the same tooth; (b) a heavy mass of bone, such as the malar bone; (c) a layer of

condensing osteitis obscuring the rarefied osteitis.

Since there are so many possibilities in the taking and interpretation of these pictures, it is absolutely essential that the technician be familiar with dental anatomy, dental pathology, and dental operative procedure, and this naturally eliminates the using of the commercial "x-ray laboratories" unless the dentist be present to note the angles at which the rays were directed upon the film.

Even with this precaution, we must regard the limitations of interpretations of the roentgen rays as *the first weak link in the argument for radical removal of all devitalized teeth.*

DIFFERENTIAL BLOOD COUNT

Another help has been used by several workers, including Russell Haden, M.D.; viz., the differential leucocyte count in periapical dental infection. A study of the leucocytes of the blood would seem to be a very promising method of approach, since the white corpuscles may respond quite rapidly when bacteria or products of bacterial activity are absorbed by the blood.

Let us analyze what these research workers find:

Heckler states that he has observed tinctorial changes in the leucocytes in the presence of dental infection; (1) Logan, a leucocytosis in 47 out of 52 cases of periapical infections. (2) Goadby thinks that there is constantly an increase in mononuclears in pyorrhoea and systemic disease. (3) Daland concludes that "small cell lymphocytosis with a corresponding decrease in the polymorphonuclear cells is an important diagnostic sign of periapical dental infection, the value of which is increased when leucopenia ex-

ists". (4) This observer considers that lymphocytosis (38 per cent or more of lymphocytes) indicates that toxins or streptococci or both are entering the blood stream. He states that he found a lymphocytosis only twice in 100 cases of chronic disease where no focal infection existed. Toren claims to have found a certain type of leucocyte in the blood indicative of infection about the teeth. (5) This cell, he thinks, originates in the lymph glands draining the infected area.

Now, if all these statements harmonized and had been accepted by all, we should have our problem nearly solved, but Dr. Russell Haden concludes after exhaustive experiments as follows: "The results of the study of the white cell count and differential count, in 200 patients, are presented, 100,000 white cells having been counted; but we find that the differential count is of little practical value in determining whether a patient is absorbing toxins or bacteria from possible foci of infection about pulpless teeth." And thus we find that another pet theory is of very little use to our diagnosis at present, and another link of the chain needs strengthening.

CURETTMENT

A few years ago many oral surgeons considered it advisable, in the removal of infected teeth, not only to curette the alveolus but even to chisel away a considerable amount of the possibly infected bone. Later we have such an eminent authority as Thomas L. Gilmer, of Chicago, stating the following: "As a rule curettment of tooth sockets is wholly unnecessary and unwarranted. I have proved this by examining many thousand roentgenograms of edentulous or partly edentulous jaws in which curettment had

not been done, and in only a few instances have I found any radiolucent zones remaining, and where such zones were found they proved to be small, innocuous cysts." Hence another link in the chain is weakened.

In fact, Theo. B. Beust, M.D., D.D.S., Louisville, Ky., has even doubted the importance attributed to streptococcus viridans. He calls it a germ without a history, and according to many authors, a germ without a proven existence. Until recently considered a harmless saprophyte, it today has assumed the role of a causative agent in the production of many diseases peculiar to the human race.

Edward L. Miloslavich, M.D., Milwaukee, says, "Not so long ago our entire interest was centered on the tonsils, to which were traced the beginning and the end of all bodily ailments. Exaggerations of every variety followed, attended as usual with the most absurd predictions. Consequently tonsils were removed in many cases without proper scientific indication, because of an apparent or even a hypothetical danger. Only recently, during the short course of one year, more than 1,000,000 tonsillectomies were performed, seemingly as a result of autosuggestive influences exerted on the practitioners, who resorted to these radical methods without proper scientific reasons.

And now our present era is concerned with the general extraction of the teeth. Of recent years many prominent physicians, surgeons, and some dentists have become so radical as to advise the removal of all devitalized teeth. Should the dental profession accept and apply the theories formulated by Rosenow and developed by others regarding dental focal infection, we should soon be con-

fronted by millions of crippled mouths; "we shall soon be a toothless nation."

CONSERVATIVE VIEWPOINT

Thus I have tried to show you the considerable amount of doubt existing regarding the relation of oral focal infection to systemic disease. "A chain is only as strong as its weakest link", and we believe every link in the chain of diagnosis and treatment is not secure; and hence, until that chain is strengthened, we believe in the advice of the conservative leaders of both professions. The following quotations from various authorities should emphasize my contentions for conservatism:—

Even Weston A. Price, radical as he is, is quoted as follows: "Just here I wish to introduce a warning; Exodontists and physicians who do not have the heart-rending worries of making dentures comfortable and serviceable, under conditions which are so nearly impossible as to be very discouraging, often feel justified in removing many doubtful teeth. I am seeing continually patients who are suffering more from the inconvenience and difficulties of mastication and nourishment than they did from the lesions from which their physician or dentist had sought to give them relief."

Dr. C. N. Johnson sums up the pulpless tooth problem to date in these words: "Whatever findings on this subject may be arrived at by laboratory investigation, there is still another phase of it which must be reckoned with. It is easy to build up a theory on the basis of blood analysis and bacterial counts, which reads convincingly and which impresses the hearer. There is no disposition at this time to minimize their importance in all dental processes; but laboratory

findings do not tell the whole story of the behaviour of pulpless teeth, nor should they determine our entire mental attitude towards them. With sane and thinking men, the evidence of long clinical experience cannot be ignored in forming an opinion as to the danger or the efficient serviceability of pulpless teeth; and yet, with some of our extremists and alarmists, the aggregate practical experience of many reputable, thoughtful, and conservative practitioners has been set at naught, as if nothing had previously been known of the subject before the present avalanche of prejudice had developed against the retention of pulpless teeth. For the past few years there has been an altogether undue concentration on the teeth as causative factors in disease; and more injustice has been done to people than can ever be atoned for by either physicians or dentists. It has become the prevalent practice with many physicians to charge the teeth at once with all the ailments of humanity without being broad enough to look farther for possible trouble in other organs. To use the vernacular of the street, the teeth have been an "easy mark" for the rank and file of medical men. It matters not that this statement may elevate the brows and cause consternation in the seats of the mighty. It is profoundly true, and it will be acknowledged as true when this wave of emotionalism and sensationalism shall have passed away—which happily it is certain to do in the fulness of time.

"Nowhere in our entire history has there been a more deplorable chapter written than that which has appeared in recent years on this subject. A proper attitude on the question cannot be gained by taking a relatively few cases in which pulpless teeth have been an undoubted

detriment, and building up a theory of sweeping condemnation, as has been done in this instance. What is the clinical history of pulpless teeth as noted by many careful, conscientious and reputable men? It is this: that when care is exercised in their treatment, a great majority of pulpless teeth behave in such a manner as to prove of the utmost benefit to the patients, and of a negligible amount of harm."

CO-OPERATION

The text of my final plea, to the professions of medicine and dentistry, is for co-operation, for recognition of our interdependence for the benefit of the health of the human race. When the two professions get together to discuss ways and means of controlling oral infection and its ravages, they find that a readjustment is necessary in order that they may understand each other. The dentist must adjust his technique on the basis of anatomy, physiology, and pathology; and the physician can no longer ignore the seriousness of oral infections. Nevertheless, it is a serious commentary that the doctor of dentistry has not been taken into full fellowship by the doctor of medicine. While it is true that physicians commonly refer to the dentist, cases in which they suspect the mouth as an aetiological factor, yet consultations, as they are conducted between members of the medical profession, are rather the exception than the rule. Too often the tendency is for the doctor of medicine to expect the doctor of dentistry to work under his dictation. A great source of misunderstanding between the medical and dental professions is the prevalent practice of referring patients to "x-ray laboratories" run by technicians who have no knowledge of dentistry. A report is

sent to the physician, and he in turn orders the extraction of certain teeth, based upon the report of such laboratories. The necessity for extraction cannot be determined by the lay technician, nor by anyone from roentgenograms alone without clinical report. The medical profession should not overlook the advantages of nature's own teeth and should remember that no artificial restoration can ever function with the efficiency of the natural teeth. It has been estimated that the best set of artificial dentures that a dentist can make has about thirty per cent of the efficiency of the best natural set. It is this glaring discrepancy between the functioning of the two kinds that makes the conscientious dentist sometimes over-conservative. The physician is sometimes too radical in his indiscriminate conviction of what he believes to be offending teeth, for he more fully understands the prognosis of certain systemic diseases that might be caused by those teeth. In order for each profession to view the patient with the proper perspective, it is necessary for each to consult with the other and for both to co-operate.

ADVICE TO DENTISTS

Now, a few emphatic words to the dentist are in place. No recent contribution has done more to dignify the position of the dentist, or to increase his responsibility, than the theory of focal infection. But the added burden of this increased responsibility for health conditions, remote from the mouth, is one that he must accept with all its consequences or give up the practice of his profession. The dentist is not in a position to attempt to diagnose general ailments and to trace these conditions to the teeth; but he

should be able to determine accurately and make an intelligent report as to all pathological conditions of the teeth and surrounding structures that might be the source of systemic involvement. More important still, the dentist should make himself competent to eliminate all such sources of focal infection.

Even more important than anything previously mentioned is the necessity for the dentist to co-operate with the physician in the prevention of focal infection in the oral cavity. Prevention must be considered prenatally, for it is useless to try to correct a condition after birth which has been brought about by a mother's incorrect living, an insufficiency of sunlight in her daily régime, and especially lack of a proper diet before her child was born. The responsibility regarding deciduous teeth starts as early as the forty-second day, and for the first permanent molars, as early as the ninetyeth day of intrauterine life. Then after birth, the same precautions must be carefully observed, with due regard to calcium metabolism. The teeth, when formed, should have the proper amount of exercise. The use of the tooth brush cannot make up wholly the loss caused by eating soft food.

Practically all teeth that act as foci of infection have been made pulpless by decay or because of it. Though some pulps of teeth have been devitalized in order to be used as abutments for bridges, yet in the newer types of bridge work that may be used today I do not believe that one is ever justified in devitalizing a tooth for that purpose alone. By the careful education of the public to the importance of visiting a conscientious dentist every six months or oftener, and by great care on the part of the dentist

to restore properly the part of the tooth lost by caries before that decay has reached the pulp, very few dental pulps should be lost in future, and hence no focal infection should arise from them. The same early and regular attention to the prevention of pyorrhoea will eradicate that source. *I believe the time has arrived when a man's success as a family dentist should be measured by the number of patients that he is able to pilot from early childhood to adult life with a full quota of teeth in normal occlusion, with vital pulps and healthy investing membranes. This is the ideal solution of the oral focal infection problem.* But in the few cases where the patient has been unwise enough to neglect a tooth until the pulp is exposed; then, under certain conditions, I believe it is still wise, where the tooth has strategic value, to devitalize and remove the pulp. But the most obvious and important conclusion from the research work thus far accomplished, is that root canal operations should be done with much more care and thoroughness than has ever been the case with a large number of practitioners.

CONCLUSIONS

If, then, we earnestly do our duty as dentists in the prevention of foci, I believe that the rising generation will be remarkably free from oral focal infection.

To clear up the mistakes of the past is a serious problem; but until we have learned more on this subject, let us be conservative. In conclusion, I can find no words more fitting than those of Dr. E. H. Hatton, a prominent member of the medical fraternity in Chicago:—"Focal Infection still has the status of an hypothesis. One can neither promise the individual nor the world that if all

traces of mouth infection are eliminated, a noteworthy, substantial, favourable result is bound to follow. Our promise to the individual should be guarded. There may be a connection between his mouth infection and his broken health. If so, the effect of its removal may be almost miraculous. If not, our efforts will be entirely in vain. We have not, as yet, sufficient evidence to assume that the removal of mouth infection is going to exercise a profound influence upon the incidence of degenerative diseases of the latter decades of life. We may, and do hope it is so."

It is my hope that both our professions will adhere to a middle-of-the-road program, that the dentist will not relapse to the careless procedures of the past, and that neither profession will be carried off its feet by the adoption of a policy of extreme radicalism.

DISCUSSION OF DR. JONES' PAPER

By Dr. Hugh Munro

Dr. Jones gives us a comprehensive view of the subject. His exposition of the theory of focal infection itself and the reports of research workers, such as Billings, Mayo, Rosenow, and Weston Price, together with some of the controversial aspects, gives us a complete picture.

The laboratory findings of Rosenow and others are no doubt spectacular and have influenced the dental profession considerably, but the clinical evidence is probably more to be relied upon.

Dr. Jones emphasizes the weak points in the theory of focal infection and deprecates the radicalism of the hundred-percenters who sacrifice unnecessarily non-vital teeth which are not demonstrably causing systemic disorder.

The point is well taken that teeth have been "an easy mark" for medical men in their diagnosis by elimination. Some physicians still refer patients to us with instructions to remove certain teeth because they "don't look right". In this connection, I am reminded of the statement of A. E. Webster, of Toronto, himself a graduate of both medicine and dentistry:—"When the dentist attempts to practise medicine and the physician attempts to practise dentistry, the patient always suffers."

One authority on this subject not mentioned by the essayist is Dr. Joseph Pollia, M.D., whose article, "Newer Concepts of Dental Infection", was reprinted by the Journal of Dental Research. I shall just mention three additional points that he brings out:

(1) The extraction of teeth to clear up systemic trouble is proportionately beneficial according to the amount of systemic disturbance caused by the extraction of the teeth; (2) Pyorrhea is a much more likely cause of systemic trouble than apical infection because of the richness of bacterial flora and the wide surface of exposure; (3) "Since the diseases that follow the effects of defective nutrition, fatigue, exposure to heat and cold, are very similar to those said to be the result of focal infection, it is apparent that focal infection is not a specific cause of any pathological expression but rather a general influence of endogenous character that deranges the defensive mechanism and permits the native bacteria to produce an infection."

DENTAL CONVENTIONS

MONTREAL DENTAL CLUB FALL CLINIC—OCT. 17-19, IN MONTREAL.

AMERICAN ACADEMY OF PERIODONTOLOGY—OCT. 31-NOV. 2, IN NEW ORLEANS, LA.

AMERICAN DENTAL ASSOCIATION—NOV. 4-8, IN NEW ORLEANS, LA.

FOURTEENTH ANNUAL MEETING OF THE ASSOCIATION OF AMERICAN WOMEN

DENTISTS—AT HOTEL ROOSEVELT, IN NEW ORLEANS, NOV. 4-8. ALL WOMEN

DENTISTS ARE CORDIALLY INVITED TO ATTEND.

GREATER NEW YORK MEETING—DEC. 2-6, HOTEL PENNSYLVANIA.

EMPIRE DENTAL MEETING—JULY 24-27, 1936, IN LONDON, ENGLAND.

PYORRHOEA ALVEOLARIS: Its Relationship to Systemic Disease

by W. Y. HAYDEN, D.D.S., London, Ontario.

PYORRHOEA Alveolaris bears a double relationship to systemic disease. We have periodontal lesions acting as foci of infection. We have also certain definite periodontal symptoms that are manifestations of systemic disease, such as the proliferative gingivitis, with suppuration, of diabetes, as stressed by Hirschfeld¹, and the rapid alveolar atrophy with extensive periodontal pocket formation, sometimes accompanying anaemia, also noted by Hirschfeld². All investigators seem agreed that there is no specific organism, although infection is invariably present in all periodontal disturbances; but the periodontal pocket is the primary factor, the inflammation and the bacterial activity being secondary. The infection, however, plays an important part in the pathological tissue changes.

In an outline by a dentist before a medical organization, it does not seem appropriate to touch upon the metastasis nor upon the types of bacteria involved, —other than to repeat the statement of Bloodgood³ that, "Disease of any organ or tissue in the body may be the result of infection that had its origin in the mouth or sinuses." Nor does it seem necessary to include the treatment of pyorrhoea. Rather does it seem advisable, since the subject is so large, to limit our attention to the purely local changes, in an endeavour to demonstrate why these morbid areas should be considered a menace to the general health.

It would appear that the most effec-

tive way to deduce the possible relationship of periodontal lesions to systemic disease, in the short time available, is to summarize the disease under the conventional headings.

SYNONYMS

Riggs' disease, periodontitis, periodontoclasia, periclasia, paradentitis, paradentosis.

The term pyorrhoea alveolaris is a misnomer. It suggests only one of the symptoms, and that, by no means a constant one. We do find pus often but it is from the gingival crevice, not from the alveolus. However, the name pyorrhoea alveolaris seems to persist.

DEFINITION

Pyorrhoea alveolaris is a breaking-down, with pocket formation, of the periodontium, or the tissues investing the teeth. The periodontium includes,—the periodontal membrane, the gingivae, and the alveolar process.

HISTORY

Periodontal disease has been widespread throughout the various civilizations,—Roman, Greek, Hebrew, Egyptian, Chinese. It has been traced back to the middle Palaeolithic period, as the Neanderthal skull shows evidence of it. It was first described in 1550 by Paré; Toirez in 1779 gave it the name pyorrhoea alveolaris; and Riggs in the last century devoted considerable attention to it. Although observed and treated for

centuries it has been only during the last fifteen or twenty years that really scientific progress has been made in its study and treatment, but one would conclude that for thousands of years pyorrhoea alveolaris must have influenced general health.

DISTRIBUTION

It is chiefly a disease of middle age and later life, seldom being found in children. When present in young adults it is usually associated with extreme traumatogenic occlusion, or with a lowered resistance caused by systemic disease. Both sexes seem to be equally subject to it. Usually patients very susceptible to caries do not develop periodontitis and vice versa. Some lower animals are affected; Box⁴ has studied and experimented upon domestic sheep, which have pyorrhoea similar to the human form.

HISTOLOGY

It seems essential to review briefly a few points of the present conception of periodontal histology, in order to elucidate the development and characteristics of these potential foci of infection.

Pericementum: The *pericementum*, or periodontal membrane, is the elastic tissue that fills the space between the root of the tooth and the alveolar process, and whose fibres attach the cementum of the root to the periosteum of the alveolus. It is of varying width increased by function and is made up of, connective tissue fibres, blood vessels, nerves, fibroblasts, cementoblasts, osteoblasts, osteoclasts, and epithelial structures⁵.

The blood vessels are numerous and run parallel to the long axis of the tooth, but with branches anastomosing with the vessels of the alveolar process, and with those of the gingivae, periosteum, and

alveolar mucosa. The nerves follow the course of the blood vessels.

The fibres, in bundles, are of five kinds, according to Black's⁶ classification:—apical, oblique (constituting by far the greatest bulk), horizontal, alveolar crest, transeptal. The last named attach the neck of each tooth to that of its neighbour, from cementum to cementum. The transeptal fibres therefore do not form part of the *pericementum*: the others do. The fibres suspend the tooth in its socket so that there is a "pull" on the alveolar bone, not a "push", thus creating normally a stimulus to the bone. Regarding the attachment of the fibres to the tooth, Gottlieb⁷ says, "The maintenance of a tooth in functional activity requires the continual deposition of new cementum on the surface of the root." This deposition of cementum also retards the downward growth of epithelium, and it prevents enlargement of the alveolar space.

Gingivae: The *gingivae*⁵, comprising the cemental gingivae, and the marginal gingivae, are the soft tissues resting upon the crests of the alveolar process, investing the cervical portion of the teeth, and continuous with the alveolar mucosa. The cemental gingivae are attached to the cementum, from the level of the alveolar crest to the base of the gingival crevice. Through this tissue pass the transeptal and other fibres. The marginal gingivae are wedge-shaped and extend from the cemental gingivae, creating the gingival crevice about each tooth. The gingival epithelium is of the stratified squamous type, on a thin basement membrane, invaginated by deep papillae of connective tissue. Box⁵ considers the crevicular surface of the marginal gingivae, "the weakest link in the chain of the epithelial



cordon of the mouth." It is unusually thin, often with breaks, he finds, and frequently with very few cells separating the flora of the mouth from the capillary loops of this highly vascular tissue, whose blood supply is derived from the pericemental, the periosteal, and the alveolar mucosal blood vessels.

Epithelial Attachment: The acceptance of Gottlieb's⁷ theory of the epithelial attachment, and the continuous eruption of the teeth has somewhat changed the viewpoint of periodontists. Gottlieb's investigations seem to prove that instead of having, as formerly thought, a line of epithelium attached to the tooth at the cemento-enamel junction, there is, in reality, in the adult, a band of epithelium of varying width (though probably averaging about one half m.m.) and of varying curvature, encircling every tooth. This band is in organic union with the cuticle of the tooth, whether it be enamel or cementum with which it is in contact. This band of epithelium Gottlieb calls the "epithelial attachment". Similar in form, it unites the oral epithelium with the tooth, and lies rootward from the bottom of the gingival crevice. The deeper rootward border of the epithelial attachment gradually proliferates and grows apically, while along the crownward border, the cells degenerate, thus separating the attachment from the tooth, and with apparently no regard for the cemento-enamel junction. But this does not necessarily mean a deepening of the crevice. With this slow downward movement of the epithelial attachment, there

normally is concurrently a resorption of the alveolar crests, a corresponding atrophy of the gingival margin, a deposition of cementum at the apex of the root, and usually abrasion of the occlusal surface. In other words we have a continuous eruption of the teeth all through life, but at a greatly varying rate of progress in different individuals, in different teeth in the same individual, and on different sides of the same tooth. Thus it is not essentially considered pathological if the clinical crown of a tooth display a portion of the root, as well as the enamel of the anatomical crown. To show that this is a physiological process, as claimed by Gottlieb, and not pathological, Kronfeld⁸ describes studies he and Ullik made on wild hedgehogs of different ages, and on other omnivorous wild animals in the natural state, having teeth resembling histologically those of man, and he has found in them the same kind of continuous eruption, with the typical epithelial attachment.

PATHOLOGY

If, due to inflammatory or morphological causes, the gingival margin can not

follow the bottom of the crevice, as it recedes, then the crevice necessarily deepens. Inflammation, as well as trauma, destroys the connective tissue fibres. Calculus, a mechanical and infective irritant, which is formed by the saliva, is almost invariably deposited on the root surface as the crevice deepens, causing further inflammatory hypertrophy and further deepening. First the cemental gingiva is detached; then the fibres of the pericementum are gradually destroyed, leaving their broken organic ends to putrefy on the denuded cementum surface. The pocket thus formed, with its poor drainage, is ideal for the retention and development of the micro-organisms always present in the mouth.

In the meantime, the inflammatory process in the gingivae has resulted in activity of the osteoclasts, with resorption of the adjacent bone. Kronfeld⁸ does not agree that this bone resorption is a true osteitis. "Necrosis of the alveolar bone under inflamed gingivae or under pyorrhoea pockets," he states, "has never been demonstrated." But with the loss of the pericemental fibres, the functional stimulation is lost, and there is no further deposition of bone.

Independently of this evolution, the periodontium of teeth in traumatogenic occlusion is further attacked by a lesion, named and described in detail by Box⁵, as "rarefying pericementitis fibrosa", in which the pericemental structures undergo change, and, enlarged, assume the form of a fibrillar connective tissue, accompanied by the rarefaction and destruction of the alveolar bone. Thus the lamina dura is lost and the pericemental space is widened, with the resultant mobility of the tooth.

As soon as this deeper condition is

complicated by gingival infection, with its constant cellular infiltration, there is rapid and deep pocket formation. By enlargement of the medullary spaces and Haversian canals, there is further bone destruction, with its ultimate conversion into granulation tissue. This new infective granulation tissue, always becomes covered to the base of the pocket with epithelium, but this epithelium is of poor quality and often of broken continuity.

"The presence of pus in the periodontal pocket," Box⁹ states, "is occasioned by the superimposition of secondary inflammatory processes, pyogenic infections, upon the primary non-suppurative inflammatory process," and Gottlieb⁷ assures us that, "Any degree of inflammation can obviously result in the death of living elements without its necessarily leading to suppuration with abscesses."

AETIOLOGY

Broderick¹⁰ goes to great length to show that the fundamental cause of all true pyorrhoea is alkalosis.

Mead¹¹ states, that, "while general systemic disturbances play a great part in the progressive pathologic change of periodontal disease, their effect is usually considered secondary to some predisposing cause. They render the tissues more susceptible to local irritation."

Merritt¹² says, "It is never one condition, or group of conditions, that is directly responsible for the development of periodontoclasia, but the combination of metabolic disturbance, lowered resistance and bacterial infection." He also quotes Jones and Simonton¹³ for authority that, "of all the bones, the alveolar process is the most sensitive to dietary faults."

There are two main types of Periodon-

titis, classified by Box⁹, as, Periodontitis Simplex and Periodontitis Complex. Periodontitis Simplex is caused by lack of care. Periodontitis Complex is usually associated with some form of traumatogenic occlusion, which is defined by Box, as, "a condition in which the systems of forces acting upon the tooth during occlusion are not in equilibrium." A horizontal overloading is particularly harmful to the supporting structures of the tooth. Gottlieb⁷ says, "a tooth is overloaded when the tensile strength of the suspensory apparatus is exceeded."

Associated with traumatogenic occlusion as local causes of periodontal disturbance are the following:—

Calculus.

Loss of teeth and subsequent drifting of others.

Lack of proper contact and consequent food impaction.

Overhanging and defective fillings.

Faulty bridgework, crowns and other restorations.

Uneven and excessive wear.

Dental caries.

Lack of sufficient exercise of the tissues.

Insanitary mouth conditions.

Holding of pipe stems, etc.

SYMPTOMS

Frequently there is very little apparent evidence of periodontal disease, even when the lesions are fairly well advanced.

The absence of pain is characteristic.

Often in the earlier stages a more or less irregular purplish line can be seen, following the outline of the gingival margin. This is usually accompanied by bleeding on the slightest provocation, such as by brushing, or by pressure of any kind. This form of gingivitis, usu-

ally the forerunner of periodontitis simplex, is due to the deposition of serumal calculus beneath the gingival margin. Any cyanosis or hypertrophy of the gingival tissues should be viewed with suspicion. Sometimes on pressure, pus exudes at the neck of the tooth, indicating an ulcer on the crevicular surface of the epithelium.

Mobility of any of the teeth, even slight, indicates resorption of the alveolar bone.

Anterior teeth protruding abnormally are often indicative; they have probably been forced forward by the lower incisors, due to an extreme overbite.

Extruding teeth as well as teeth out of alignment are frequently a sign.

A gingival "flap", especially one partly covering a third molar, almost invariably conceals a seat of infection.

There is a characteristic breath in the later stages.

Box⁵ enumerates among others, the following clinical signs of incipient periodontitis:—

1. Asymetric recession of the marginal gingival line.

2. Sharply drawn linear depressions in the alveolar mucosa, parallel to the long axis of the root.

3. Clefts in the gingival border, commonly to one side of the tooth.

4. Absence of stippling,—a smooth, shiny surface instead of the normal stippled gingiva.

5. Festoons,—a hyperplasia of the marginal gingiva.

6. A dilatation of the blood vessels in the gingival margin.

7. Increased depth of the gingival crevice. Any increase much beyond two millimeters is to be regarded as a sign of pocket formation.

DIAGNOSIS

The periodontal probe, in several angles, and preferably graduated in millimeters, is the prime requisite in diagnosing. The probe should be passed all around the neck of every tooth, and if it drops three millimeters or more beneath the gingival margin, there is pocket formation, and consequently a potential focus of infection. The orifice of the pocket may be very narrow.

Test the teeth between the two index fingers for mobility.

Digital pressure on the gingivae usually reveals the presence of pus, if present.

The tissues should be carefully examined for any of the signs enumerated above (under symptoms).

A dirty mouth does not necessarily denote periodontitis, although it will likely lead to it eventually.

It is best to make a full radiodontic examination. The radiograph is not infallible, but it is an indispensable assistance. There is, however, a tendency to put too much dependence upon it. Without a thorough clinical examination the radiograph is apt to be misleading. Not infrequently, a tooth, having a pocket extending well toward its apex, will appear perfectly clear in the radiograph; the narrow tortuous pocket may be in such a position that the x-ray misses it. A periodontal abscess in the bifurcation of the roots of an upper molar often does not show in a radiograph. On the other hand, the radiologist sometimes condemns a perfectly good tooth, because the alveolar bone supporting that particular tooth is of poor structure, when the clinical explanation is, that the tooth is out of function, and nature has not found it necessary to build up so strong

a bony support for it as for the others, which are in occlusion.

Frequently the radiograph shows a general resorption of the alveolar crests. Pathologically this may mean nothing. If the patient is past middle age, it usually denotes just a physiological senile atrophy. If the patient is younger, it may mean merely that the rate of progress of the later and continuous, eruption of the teeth, has been unusually rapid. Only a clinical examination can decide this. If there is a corresponding atrophy of the gingivae, with the gingival crevice of normal depth, there is no infection. If, on the other hand, the clinical examination discloses pockets, and no marked recession of the gingival margin, then we have a pathological condition. Moreover, the patient may have had previous periodontal treatment and the periodontium be now free from infection, but this may not be shown radiographically. However, the radiograph reveals details of the condition of the periodontal structures that can be learned in no other way. And it is a necessary means of ascertaining the extent of bone loss. It serves as a check in diagnosing, and it also confirms the clinical findings.

THE FOCUS

Box¹⁴ maintains that the periodontal pocket is more important as a focus of infection than is the encapsulated apical granuloma, or the apical abscess with a fistula. We have in the periodontal lesion⁹ an area of soft tissues showing definite chronic reaction to pathogenic micro-organisms, with the presence of a rich capillary bed, with the irritation of calculus to excite capillary response, and with the mobility of the tooth in its alveolus, under occlusal stress, to mechan-

ically aid the passage of bacteria from this focus into the blood stream. He also directs our attention to the large area¹⁴ of infected soft tissue exposed in these pockets,—sometimes, he states, as in one patient, an area great enough to cover the palm of the hand.

In treatment, the objective that must be attained, is the total elimination of the pockets. Here, again, we encounter a double, though indefinite, relationship; a lowered general vitality retards periodontal response to local treatment, whereas, after the clearing of the pockets, there is usually reported an improved systemic condition. Would that there might be demonstrated a more definite relationship between the oral focus and the systemic disease, in the individual case!

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260 *Queen's Ave.*

CANADIAN FOUNDATION FOR PREVENTIVE DENTISTRY

by B. E. BROWNLEE, L.D.S., D.D.S., Secretary, Winnipeg, Manitoba.

THE Canadian Foundation For Preventive Dentistry was formed in February, 1932, with a Dominion charter of incorporation under the Charitable Associations Section of the Companies' Act.

The powers conferred by this charter are ample to carry out any plan that may be to the advantage of the public in matters of mouth health or to the profession of dentistry in its relationship to the public.

There are many organizations in Canada doing excellent work in educating the public along the lines of the value of mouth health and its relationship to general health but we feel that there is little advantage to the public in making it conscious of a need without furnishing the means of meeting that need. It is largely in this latter activity, the clinical application of preventive dentistry, that the Foundation has been operating and in which field it hopes to continue.

Preventive dentistry is unquestionably the only way in which the majority of the public can hope to achieve and maintain mouth health on the most economical and efficient basis. That in turn can be accomplished, only, by early and frequent attention, which can best be given, we believe, in pre-school and school clinics. At the present time it is, of course, preferable that these children should be taken care of in private practice wherever possible, as undoubtedly they can secure a better type of service on a sound economic basis than can be rendered in general clinics. Inlay work, treatment of malocclusion and certain other types of treatment, of course, are beyond the bounds of ordinary clinic possibilities. The only hope for children who are dependent for care upon clinics of this sort, is that they may have the good fortune to be reached early enough to prevent the development of the conditions which would call for these types of service.

There is also an advantage in these clinics for the child of well-to-do parents, in that during the visit of the clinic the attention of the parent is called to the need for service, and the child receives preventive or early treatment that may

save many teeth and foster a higher standard of general health.

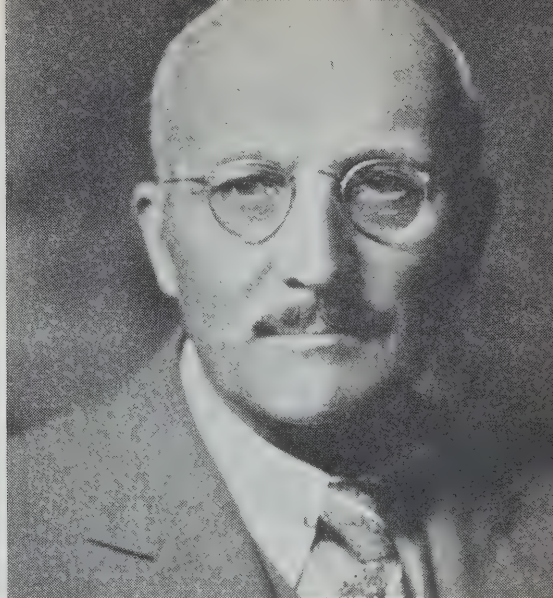
It has been the experience of the Foundation that, where dental clinics are held, there is a growth and stimulus given to medicine as a whole. Eye, tonsil and other clinics are welcomed and sought after. The actual experience of the benefits of healthy mouths for their children, stimulates the interest of parents and officials in eliminating other defects wherever possible; so we believe that when we create or encourage a dental clinic for children, we are making a very definite contribution to general health as well as to public mouth health.

In addition to having stimulated interest in the mouth and general health of the children among the adults, these clinics have become a very potent factor in developing an appreciation of the importance of mouth health for the parents themselves. In fact, so much interest has been aroused that as a direct result there are now resident dentists in several districts where previously it would have been impossible for one to have secured an adequate living.

Up to the present time, the Foundation has confined its operations to Manitoba, as the executive wished to secure sufficient data and to work out its plans to a point where it was satisfied that it was justified in asking the co-operation of the dentists of other provinces. It has had the active co-operation of the Manitoba Dental Association, the Canadian Dental Hygiene Council, and the Department of Health of the Province of Manitoba.

After conducting clinics and having cared for thousands of children, the Foundation finds that it can provide an adequate service for these children at a

C. H. WALSH
President of the Canadian
Foundation for Preventive Dentistry



comparatively small cost. The cost can be reduced when organized effort is carried on over a longer period. Up to the present many of these clinics have been conducted for children who have received little or no attention along these lines and at their first appearance it is found that their permanent teeth are in such a state that removal of a number of them is necessary. One group of 350 children examined recently showed 240 permanent molars carious to the point where removal was necessary. Other carious processes were proportionately numerous. Naturally it is difficult to accomplish all this preliminary work for a large group at the average cost and in some cases it is impossible but when their mouths have been put in the best possible condition they can be kept thus for some years at a figure below the average, so that we will be enabled to keep our figures at a sound level.

It has been the intention of the Foundation to establish a minimum salary mark of three hundred dollars a month for any dentist operating in any public capacity and to prove that on that

basis the cost of an adequate dental service can be kept within economic bounds. The public appears to have accepted our ideas as fair and sound, for these clinics have been repeated year after year in many districts with the local groups carrying all cost with the exception of supplies and transportation of the operator appointed, where he had to travel some distance to reach his clinic.

The associations and colleges created by the provincial licencing acts have been bearing more than their fair share of the cost of education of the public in dental health and of the dental health services in addition to the unremunerated service of a public or charitable nature contributed by their members. Further, the experiences of the last few years indicate that the funds of these organizations should be kept at as high a level as possible; so, with the intention of relieving these funds as much as possible from levies for outside activities, the right was secured under the charter of the Foundation to obtain money in various ways for the support of its work. These ways include gifts from individuals and organi-

zations, interested in public health, and profits from the sale of mouth health products of which it holds the formulae, patents or designs and issued under a trademark registered and owned by the Foundation. It is hoped that this latter source will ultimately provide adequate funds to carry out its plans in several lines of work, among which are publication of reprints for the public, assistance in research, contributions to the benevolent fund of the Canadian Dental Association, development of school and pre-school clinics and such other activities as will be to the advantage of the profession and the public.

Much that might have been done in the past to raise the standard of public mouth health has not been done because of the lack of available funds. The Foundation properly backed by the dentists of Canada can to a very definite extent remedy that situation.

The working plan of the Foundation was evolved by a group of dentists who had carried on the dental educational work of the Manitoba Dental Association for a period of over ten years, aided later by a very successful campaign under Dr. Harry Thomson for the Canadian Dental Hygiene Council. The realization came to them that if their objectives were to be realized, it would take more money than they felt the Association should be asked to spend. While considering this latter phase of the situation they were offered the opportunity of profiting from the use of certain patents and formulae. This crystallized the idea of allowing the public to assist in raising the funds to further the efforts that were being made to raise the standard of public mouth health. After much investigation of products, trade methods and other mat-

ters the trademark "Guardent" was taken over with the idea that the powder now marketed under that name should be used as a nucleus to create a definite source of funds that could be used effectively in furthering the efforts now being made, without interfering in any way with those conducting them, and to open up new fields of action that seem to be of importance to the giving by dentistry of a successful service to the public.

Up to the present, there has not been evolved any other plan, for example, that would yield funds for the C. D. A. Benevolent Fund that would not be a direct contribution from the dentists of Canada. We feel that the profession of dentistry has given and is giving a public service that makes the care of its sick or aged members who are not able to maintain themselves, a community obligation. The size of the Foundation's contribution to such a fund will depend entirely on the support given its efforts. The quality and efficiency of any product offered to the public under its seal will be kept up to the highest possible standard, and several of the articles will, we believe, fill definite needs, that are not now provided for in the field of hygiene products.

The present executive of the Foundation feels that the usefulness of the organization to the public and to the profession will be in exact ratio to the support given it by the dentists of Canada; and we seek the personal support of the dentists in our efforts, because we believe that the successful pursuit of our objectives will yield to the dentist a personal benefit in addition to the valuable service our organization renders to the children in particular and the public in general.

THE FORUM

GOLD-DECORATED TEETH FROM THE PHILIPPINE ISLANDS

AMONG the papers of the Michigan Academy of Sciences, Arts and Letters, published by the University of Michigan Press, 1935, appears an interesting discussion on the above subject by Carl E. Guthe.

It is stated that in the Philippine collections of the Museum of Anthropology of the University of Michigan there is a group of forty-three human teeth possessing small holes in which gold discs or plugs were inserted for decorative purposes. There is every reason to believe that the Filipinos obtained the gold by placer mining in some of the streams.

The specimens were obtained in caves used as places of burial, by the 1922-25 archeological expedition sent out by the University. The stratigraphical dating of this custom was not obtainable, but it may be noted that some of the associated

Chinese trade vessels appear to have been made during the Sung dynasty (960-1279 A.D.). There is documentary evidence, however, states the writer, that the Filipinos decorated their teeth in this manner not many centuries ago. In fact, an interest in this form of personal adornment still persists among the Filipinos, according to Dr. Ottofy, who practised in Manila during the early days of American Occupation.

He describes the use of small gold heart-shaped discs, to the distal surface of which two small lugs were soldered, these passing between the teeth in order to secure the ornament.

Since the introduction of gold crowns, other methods of adornment with gold have been abandoned in favour of these more modern attachments.

THE INFLUENCE OF PASTEURIZATION UPON THE VITAMIN C, IODINE AND PHOSPHATASE CONTENT OF RAW MILK*

by W. B. GRANDISON, L.D.S., Edin., and D. B. CRUICKSHANK, L.R.C.P., and S. Edin., D.P.H., L.D.S. Edin.

(Abstract of paper in *British Dental Journal*, March 15, 1935.)

SINCE it is well known that milk, when boiled, and to a lesser degree when pasteurized, undergoes considerable alteration, it is hoped that the time will come when the need for pasteurization will no longer exist.

Even under ideal conditions of pasteurization, the destruction of the vitamin C content of the milk is from 20 to 40 per cent. There is a very decided loss of iodine, due to volatilization, and

phosphatase is completely destroyed if the milk is efficiently pasteurized.

The superiority of safe raw milk is a steadily growing conviction. The advantages of even "rapidly boiled" milk over pasteurized milk are well known to the pediatrician, and raw milk is considered superior in nutritional value even to pasteurized milk to which has been added cod-liver oil and orange juice.

*From the Dental Unit of Papworth Village Settlement.

DENTAL CARIES

IN FEBRUARY, 1930, there was initiated at Columbia University an extensive project for the investigation of the causes of dental caries. The progress report of work done up to February, 1934, was published in the *Journal of Dental Research*, August, 1934. The groups working on this problem conclude that the type of micro-organisms present in the mouth, the physical properties of the foodstuffs taken into the mouth, and the form and structure of the teeth, while important, do not alone account for the resistance of one individual and the susceptibility of another. It was found that the evidence warrants the assumption that the lactobacilli organisms are essential to the dental caries process, but mere presence of these organisms in a mouth is not alone sufficient to account for the production of dental decay. The results of experiments indicated that caries may on occasion be initiated through the agency of a highly potent external factor, but they also indicated that resistance to dental caries involves one or more systemic factors apparently

related to calcium-phosphorus metabolism.

It was found that ultraviolet-light therapy proved much more efficacious as a protective agent against dental caries than other sources of vitamin D. Additions to the diets of liberal amounts of the best known sources of vitamin C, in the form of oranges, orange juice, bananas, and tomato juice, had little effect on the incidence of dental caries; and it was concluded that the possible deficiency of Vitamin C in the dietary is not responsible for the great susceptibility of children to dental decay.

The report concludes with the statement that the results would indicate that the process of dental decay is associated both with environmental factors related to food retention and lactobacillus fermentation, and with physiological factors related to calcium-phosphorus metabolism, and that to date, evidence as to the mechanism whereby physiological influences operate suggests that they work through the interior of teeth rather than through the saliva. — *From Journal of Dental Research.*

VINCENT'S INFECTION

by P. G. PUTERBAUGH, M.D., D.D.S., Chicago, Illinois.

Summary of paper in Journal of the American Dental Association, November, 1934.

SUMMARY

THE diagnosis of Vincent's infection or gingivitis is based on the presence of the clinical symptoms of the disease and the finding of large numbers of the organisms in smears obtained from the lesions.

Lowered vital resistance of the tissues

is a prerequisite to the establishment of the disease. Common predisposition conditions are avitaminosis, malnutrition, blood dyscrasias, and disturbed metabolism. Cigaret smoking greatly increases susceptibility, and, if persisted in, greatly retards recovery.

In favorable cases, oral and general

hygienic measures alone have sufficed to restore the tissues to health and eradicate the organisms.

Treatment must be continued for sev-

eral weeks after the subsidence of clinical symptoms as a prophylaxis against recurrent attacks.

VITAMIN C.

PERHAPS the greatest interest during the last meeting of the British Association for the Advancement of Science was aroused by Professor Szent-Gyorgyi's description to the Chemistry Section of extracting a substance with the properties of Vitamin C from the adrenal gland, and of his ultimate success in obtaining, in collaboration with other workers, quantities of the vitamin on a commercial scale from the vegetable paprika. The claim that a single injection of the product will effect a marked im-

provement in cases of pyorrhea, haemophilia, and certain haemorrhagic diseases has so important a bearing upon a possible method of treatment that it will certainly secure further systematic investigation. He is to be congratulated upon placing the rights to his patented process of manufacture in the hands of the British Government's Department of Scientific and Industrial Research, with the stipulation that any profits are to be devoted to the advance of science. — *From the British Dental Journal*, Oct. 1, 1934.

DENTAL PROBLEMS IN CHINA

THERE is no law or regulation governing the practice of dentistry. Anybody is free to proclaim himself a dentist. The native practitioner is nothing but a mechanic, confining his activities to rendering reparative service along unsanitary lines and by obsolete methods.

It is of common occurrence for a man to suffer from a mild toothache for years without having the same attended to.

Thousands upon thousands of the population still do without a tooth brush.

Poverty is rampant in this country. A great percentage of the people have barely enough to live on, and consequently economize on the number of visits to the doctor and dentist.

The diet is of mixed variety, with carbohydrates predominating, and is conducive to dental caries, 95% of the people being afflicted with this disease.

The number of graduate dentists in China is estimated to be less than 100, while the number of apprentice trained is about 5,000.

There are only two regular schools, the first being the College of Dentistry of West China University, in Chengtu, Szechuen, the pioneer institution, started in 1918 by Dr. Ashley Lindsay, now Dean of the school; and the second being the College of Dentistry of Université l'Aurore, started recently in Shanghai. There is also an evening school for practitioners and apprentices, initiated by local dentists.

What China needs most is dental schools to train more qualified and ethical men. The schools should encourage men to come out for public service rather than private practice, since the greatest good can be done by public-spirited dentists.

Since physical health and oral health are so intimately connected, our race can never become improved until our people begin to take good care of their teeth. From that point of view our dental problem becomes a national problem. — *Excerpts from China Dental Journal*.

PREMATURE MORTALITY

MEDICAL science has done much, and will do more, to prevent what might be termed "premature mortality"—that is, death before fifty, especially from infections; but persons in the extreme old age group will continue to live because

heredity and temperament have given them a physical organization capable of resisting the noxious forces that cause death to their less sturdily constructed fellow men.—*Raymond Pearl, Professor of Biology, Johns Hopkins University.*



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PRINCE EDWARD ISLAND

SASKATCHEWAN

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S



W. T. Waye, Charlottetown



F. C. Harwood, Moose Jaw

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

NOVA SCOTIA



A. W. Faulkner, Halifax

ALBERTA



John Clay, Calgary

NEW BRUNSWICK



J. F. Edgcombe, Saint John

MANITOBA



J. F. Morrison, Winnipeg

BRITISH COLUMBIA



J. S. Bricker, Vancouver

THE MAYO CLINIC

Situated in the picturesque valley of the Zumbro River in Minnesota, U.S.A., lies the city of Rochester, eighty-five miles by road from the twin cities of Minneapolis and Saint Paul.

In 1920 Rochester had a population of about ten thousand. The present population is over twenty thousand, and presents a metropolitan appearance seldom found in cities of far greater size. Rochester's leading hotel, the Kahler, was opened in 1921, and is connected with the Mayo clinic building and several hospitals by seven city blocks of subterranean tunnels.

Rochester has attained world-wide prominence and is now recognized as one of the leading medical centres of the world, due to the presence of the famous Mayo Clinic.

The original Medical Building, occupying half a city block and opened in 1914, was four and one-half storeys in height, contained four hundred rooms and a lobby having a seating capacity of seven hundred. In 1927 ground was broken for the construction of the present imposing structure, occupying the balance of the half-block and connected with the original building. The new structure, erected at a cost of three million dollars, is nineteen storeys in

height, surmounted with a tower in which is located the carillon, composed of twenty-three bells which were cast at Croydon, England. The largest of these bells weighs more than four tons and the smallest something over seventy pounds. The carillon is two hundred and seventy-five feet above the level of the sidewalk. Recitals are given several times a week.

To gaze upon this monument of art, with its marbles from many lands, its beautifully carved woodwork, its oil paintings, its luxurious library, all arranged in wonderful harmony, is to marvel at the master mind which created it.

It is not, however, the woodcraft, the metal work, that impresses one most, but rather the spirit of the institution, the inspiration that comes from witnessing the achievements of superb leadership.

One might well inquire how this famous institution came to be located in this heretofore almost unknown locality. It happened somewhat like this: Dr. William Worrall Mayo was a surgeon in the United States army, and following the Civil War took part in the Indian campaign in Minnesota, finally settling in the village of Rochester. Dr. W. J. Mayo was one-and-a-half years of age when his father made his home here, and Dr. C. H. Mayo was born later in Rochester. These two now famous sons took their pre-medical education in their home town and later graduated in medicine at Ann Arbor University. They joined their father at Rochester, in the practice of medicine, and thus originated this unique group. There is nothing just like it in the world today.

In the earlier days, one brother specialized in diseases of the head and neck and the other in diseases of the rest of the body. Then other specialties were added, until now it has become the largest medical and surgical group in existence, with a staff of about four hundred physicians including Fellows, and if one includes the non-professional staff, the total number of people employed in the Clinic is not far from twelve hundred.

The largest number of patients registered in any one year, from all parts of the world, was seventy-eight thousand. In 1932 the registration dropped to fifty thousand, but this year the present outlook is for about seventy thousand. As about two persons, on the average, come with every patient, the floating population of the city is greatly increased.

The finest monument ever erected to dentistry is to be found in the Mayo Clinic, half of one floor being given over to the dental section. One is impressed at once with the fact that dentistry has been given the same space, the same prominence, and the same importance as any other branch of the healing art,—a silent tribute to the Doctors Mayo in that they have seen that medicine and dentistry must be brought closer together.

Presiding over the Dental Section are three distinguished dental surgeons, Doctors Boyd Gardner, L. T. Austin and E. C. Stafne,—yet in spite of their prominent positions, the many duties that continually confront them, the urge

MAYO CLINIC



that is continually leading them on to bring this section up to the highest possible standard, they always have time to receive the dental visitor graciously and assist him in every way possible.

During a recent visit at this Fount of Knowledge, the writer was impressed with the fact that the patients who are presenting themselves at this Clinic at the present time have better dental work in their mouths than ever before. More people are coming who have already had their mouths x-rayed. The dental wrecks so often seen formerly, are not so much in evidence.

At this Dental Section, following x-ray examinations, they find that one-third of all people wearing dentures have at least one embedded root fragment. Twenty-two per cent of all people who have had one or more teeth

extracted have one root still lodged in the alveolus. This Section believes strongly in the use of the x-ray as a post-operative feature, and is confident that if this practice prevailed generally, much trouble would be avoided.

In the Dental Section the duties are limited to diagnosis, surgery, and consultation. No operative dentistry is performed.

A prominent business executive told the writer recently, that it would pay every business man to visit Rochester just for the inspiration and help he would receive from looking over their business systems. We would advise any dentist of Canada, who can do so, to plan to visit this world-famous institution at as early a date as possible. Dentists are made most welcome and are privileged to observe the work in any section of the Clinic.

*"Within this friendly little town
A Clinic building stands.
Its great white walls and stately halls
Are known to many lands.
And here the sick and old and poor,
And young and rich and great
Meet on this common battle-ground
For help within its gate."*

NEWS FROM THE PROVINCES

PRINCE EDWARD ISLAND

ANNUAL MEETING

The thirty-fifth annual meeting of the Prince Edward Island Dental Association was held in Charlottetown on August 21.

The following officers were elected for the ensuing year:

D. T. Waye, President.

H. E. Clark, Vice-President.

J. H. Ayres, Secretary-Registrar-Treasurer.

Drs. F. E. Smallwood and R. H. Barrett were elected with the above officers to form the Dental Council.

Dr. Heath McIntyre submitted an excellent and very comprehensive report of the recent Dental Educational Campaign carried on in the Province under the supervision of Dr. Harry Thompson.

ALBERTA

Clinics for preventive dentistry, giving service to children of school and pre-school age, are being arranged throughout the prov-

ince. They will be conducted under the auspices of the Alberta Dental Health Council.—*Lethbridge Herald*.

SASKATCHEWAN

A TRIBUTE TO AMERICAN COURTESY

Your scribe had the privilege, during July, of taking post-graduate work at the very fine dental school of the University of Minnesota in Minneapolis. He cannot speak too highly of the cordial reception and innumerable courtesies received at the hands of the Faculty and other members of the profession in the "Twin Cities", nor of their readiness to pass on their ideas and technique developed through specialization.

Truly, dentistry has attained to the full status of a profession when the knowledge gained by a member is placed at the disposal of the whole profession, and when members from another country are received as confrères and friends by those prominent in that profession. Long may it continue!

—F. C. Harwood.

News from the Provinces

Dr. R. H. McDougall, of Moose Jaw, attended the Pacific Coast Dental Conference, held in July at Long Beach, California. He considered it a memorable and profitable meeting, with an attendance of eighteen hundred and over two hundred clinics in progress at one time.

Dr. McDougall was loud in his praise of the hearty welcome and splendid entertainment extended to a visiting Canadian.

DENTAL COUNCIL

At the recent election for members of the Dental Council of Saskatchewan, the three retiring members, Doctors King, Irwin and Brett, were all returned. The Council for this year will again be composed of the following members:

J. C. King, Humboldt;
W. W. Irwin, Moose Jaw;
P. W. Winthrop, Saskatoon;
A. J. Brett, Regina;
D. J. Brass, Yorkton;
L. J. D. Fasken, Regina, as Secretary-Registrar.

MANITOBA

The Women's Institute of Edrans held a very successful dental clinic the last week of July with Doctor Boyd, of Gladstone, in charge. Four school districts were visited and ninety-two children were treated.

ONTARIO

Doctor Frederick Killmer, the oldest practicing dentist in St. Catharines, and one of the oldest in the province, is retiring. He graduated from the R. C. D. S. in 1884 and came directly to St. Catharines where he has practiced ever since.

EASTERN ONTARIO DENTAL ASSOCIATION

At the 58th annual meeting of the Eastern Ontario Dental Association the following officers were elected:

President—Dwight H. Mallory.

Vice-President—George O. Hutchinson, Ottawa.

Secretary-Treasurer—G. V. Tario, Pembroke.

Program Committee—Doctors J. Philips, Cornwall, Ont.; K. McDowell, Renfrew, Ont.;

F. B. Sparks, Kingston; E. J. Walroth, Carleton Place, Ont.; and D. A. Roy McDongal, Ottawa.

Auditors—Doctors W. C. McCarthy and A. Allan Armstrong, Ottawa.

DENTAL NURSES

The annual meeting of the Dental Nurses' Alumnae Association was held in Toronto, September 10th. The following executive was elected for the coming year: President, Miss Delys Elliott; Vice-President, Miss Jeanne Tanner; Recording-Secretary, Miss Anne Budd; Treasurer, Miss Audrey Park; Corresponding Secretary, Miss Kay Andrews; Assistant Secretary, Miss Marion Bray; Social Convener, Miss Norah Varey; Membership Convener, Miss Jean Lindsay; Visiting Convener, Miss Adele Cameron.

Compulsory medical examination at intervals is a prospect in Canada. The day seems to be approaching when Canadians will be kept very busy doing the things the Government orders them to do for their own protection.—*Toronto Globe*.

In an essay contest arranged by the *Sudbury Lions' Club*, on the subject "The Care of the Teeth", one thousand children from the public and separate schools competed.

Dr. F. R. Drewery, of Cobourg, was chosen president of the Durham Ontario Dental Association in March.

At Port Arthur eight-one children have received dental treatment through the free *Gyro Dental Clinic* since the beginning of the school year, as reported March 5th.

Dr. W. D. Ramore, Port Arthur, was elected president of the Thunder Bay Dental Association at the April meeting.

QUEBEC

URGENT NEED FOR DENTAL CLINICS

Abstract of an address to the Rotary Club of Montreal, by Dr. D. P. Mowry, Montreal, P. Q.

The child who is full of vitality is alert, interested and alive. The child with lowered physique is dull, apathetic, listless, and only

half awake mentally. The child of today is the adult of tomorrow, and for this reason every attention should be given to his care and his welfare.

The appalling fact, however, is that over 12,000 school children in Montreal alone, are suffering sickness and potential death through the after-effects of decayed teeth, from which all types of disease originate, including sinus trouble, eye affliction, rheumatism, anaemia, heart lesions, and cancer. In a recent survey made in 26 Montreal schools, 84 per cent of the children examined were in immediate need of dental care. Moreover, dentists working in the Red Cross clinics report so serious a condition in the dental state of their patients that in some cases it is necessary to supply 12-year-old children with artificial teeth.

Public health departments are aware of the present situation, but find their hands tied financially. A short time ago, Dr. Boucher of the Montreal Health Department applied for fourteen public dental clinics, but he was able to obtain only two part-time clinics for extractions and cleaning only. To meet the need, a special committee was formed last October and the Junior Red Cross Dental Committee was brought into being.

The Canadian Dental Hygiene Council assisted in preparing a general program of activity, and initial surveys were made by the Health Department of Montreal, Westmount, and Verdun, clinics being established where most needed. One hundred and seventeen clinics were held from the month of February, and two hundred and eighty-one children completed their dental treatment. Permanent teeth have been preserved wherever possible, and the cost has been kept down to an average of \$2.56 per patient.

This work should be the responsibility of

the city, but until it is possible to extend city dental clinics greatly, the emergency must be met. It is a splendid field of service for benevolent organizations, for in assisting to preserve the teeth of the children, they will be laying a foundation for improved health in coming generations.

NEW BRUNSWICK

At the annual business meeting of the New Brunswick Dental Society, held on July 8th, the following officers were elected:

President—B. F. Reade, Moncton.

Vice-President—W. C. Carruthers, Saint John.

Sec.-Treas. and Registrar—S. K. Wetmore, Saint John.

The following are the members of the Council re-elected:

H. W. MacDonald, Saint John; B. R. Ross, Fredericton; George G. MacDougall, Sussex; and S. K. Donald, Moncton.

The following were newly elected:

A. J. Coughlan, Saint John; T. H. Lewis, Woodstock; and C. F. M. Purdy, Moncton.

At the fortieth annual convention of the New Brunswick Dental Society, *Dr. Howard W. MacDonald, of Saint John*, was elected delegate to the Canadian Dental Association, and Dr. James Magee as member of the Dominion Dental Council, representing New Brunswick. Dr. John F. Edgecombe was elected to the board of the Canadian Oral Hygiene Council.

NOVA SCOTIA

Doctor A. W. Faulkner has been appointed chairman of the Committee on Nomenclature of the Canadian Dental Association.

EMPIRE NEWS

GREAT BRITAIN

PRACTICE OF DENTISTRY IN GREAT BRITAIN BY ALIENS

The Representative Board arrived at the conclusion that, save under exceptional circumstances, it was not desirable that alien dentists should be granted licences by the

Home Office to reside permanently in Great Britain, notwithstanding that they held a dental qualification entitling to registration in the Dentists' Register.—*B. D. A. Journal*.

Sir Norman Bennett, who was president of the British Dental Association and who presided at the Empire Dental Conference held

in London in that year, ' practice known to date back beyond two hundred and thirty-three years.

—*Dental Magazine and Oral Topics*.

A diploma in anaesthetics has been recently instituted by the Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons. This is the first diploma in this subject which has been instituted in any country.

AUSTRALIA

KNIGHTHOOD

For the first time in the history of dentistry in Australia, a knighthood has been conferred upon a member of the dental profession, this honour falling upon Dr. Harry Cuthbertson Moxham, Federal President of the Australian Dental Association and President of the Dental Board of New South Wales.

Sir Harry graduated from the University of Pennsylvania in 1902 and since then has been associated with almost every movement for the advancement of dentistry in Australia; a veritable tower of strength to the profession.

The Canadian Dental Association congratulates Sir Harry upon receiving this honour and upon the honour done the profession of dentistry by this gracious act of His Majesty the King.

NEW ZEALAND

THE ORTHODONTIC PROBLEM

That malocclusion, and facial deformity which is its concomitant, is on the increase in New Zealand must be obvious to the most casual observer. Indeed, its incidence might almost be said to be on a par with dental caries. But perhaps in this respect New Zealand is no exception, since a contemporary Canadian journal estimates its prevalence in that Dominion to be from 70 per cent to 90

per cent. And probably the various health organizations and research reports in other countries could tell of a similar state of affairs.

The doctrine of a clean mouth may be sound teaching and practice, but *when deciduous teeth are removed without the insertion of space retainers, such a doctrine is open to criticism*, since by the elimination of one evil we are merely paving the way for another that is even more serious, in that the growth of the arches is arrested, which in turn results in the impaction of the permanent teeth. That so little attention is given to this matter is difficult to understand; but until the profession recognizes its responsibilities in this respect there must always remain a touch of irony in its claims to function as a health service in the full meaning of the term.

Recently in the Birmingham Hospital an Orthodontic Clinic was established, and sooner or later the question of establishing similar clinics in the main hospitals throughout New Zealand is bound to arise.—*From the New Zealand Dental Journal*.

SOUTH AFRICA

DENTAL EDUCATION IN SOUTH AFRICA

A complete five-year course leading to the degree of Bachelor of Dental Surgery was established at the University of the Witwatersrand, Johannesburg, in 1924. This was the first and, at present, is the only degree conferred in South Africa.

Bachelors of Dental Surgery of three years' standing may proceed by thesis to the higher degree of Doctor of Dental Surgery.

The Dental Hospital is exceedingly well equipped and is owned and controlled by the University.

At the present time, there are forty-two students in the school.—*The Dental Magazine and Oral Topics*, July, 1935.

GENERAL NEWS

SUCCESSFUL CANDIDATES AT THE DOMINION DENTAL COUNCIL EXAMINATIONS HELD IN JUNE, 1935.

B. Cantor, H. L. Harris, F. N. Bennett, J. H. A. Peters, N. A. Weldon, William Garard, L. E. Oiffer, J. Rice, D. A. King,

J. E. Campbell.

W. H. Ibberson and Archibald Cohen passed all papers except Anaesthetics.

The following candidates have passed in the listed subjects:

Metallurgy—E. D. Gower, R. E. Partridge,

The Journal of The Canadian Dental Association

G. K. McKeown, W. G. McIntosh, A. D. Leask.

Anaesthetics—A. I. Hamilton, J. V. Weselake, D. C. Geddes, J. O. Brown, J. G. Millar, L. N. Green, E. G. Gower, S. R. Chodoroff, J. K. Garrett.

Materia Medica—B. Bokhant, R. E. Partridge, G. K. McKeown.

Therapeutics—J. O. Brown, J. G. Millar, J. K. Garrett, W. G. McIntosh.

Orthodontia—A. I. Hamilton, J. V. Weselake, J. O. Brown, J. G. Millar, L. N. Green, E. G. Gower, S. R. Chodoroff, J. K. Garrett.

Pathology—A. I. Hamilton, J. V. Weselake, B. Bokhant, D. C. Geddes, J. O. Brown, J. G. Millar, L. N. Green, E. D. Gower, S. R. Chodoroff, J. K. Garrett, W. G. McIntosh, A. D. Leask.

Bacteriology—R. E. Partridge, G. K. McKeown, J. N. Tritt, B. J. Koenig, A. Olfman.

Physics—Sidney Corman, W. R. Scott, I. A. L. Millar, L. I. Creasy, B. J. Koenig, J. M. Clarke, H. Spencer Grey.

Chemistry—W. R. Scott, I. A. L. Millar, R. E. Partridge, G. K. McKeown, W. G. McIntosh, A. D. Leask, B. J. Koenig, A. Olfman.

Anatomy—Sidney Corman, J. R. Nevin, L. I. Creasy, U. U. Hancheroff, D. T. Wilson, B. J. Koenig, A. Olfman.

Physiology—Sidney Corman, R. E. Partridge, G. K. McKeown, W. G. McIntosh, A. D. Leask, H. R. Nevin, B. J. Koenig, A. Olfman.

Histology—W. R. Scott, I. A. L. Millar, U. U. Hancheroff, D. T. Wilson, B. J. Koenig, A. Olfman, Edward Sklar.

A. D. A. MASON, *Secretary*.

The provision of medical care for the native inhabitants of the Arctic Coast of the Dominion is a responsibility of the Federal Government.

Eight doctors are employed in this work, and winter and summer patrols travel hundreds of miles, using every mode of transport known—airplane, steamboat, motorboat, canoe and dog sled—carrying relief to Eskimos, Indians, half-breeds, and indigent whites.

By painstaking instruction, the doctors have reduced considerably the number of deaths due to dietary causes. Every effort is being made to have the Eskimos continue their hunting of the seal and caribou and not to be too dependent on the white man's food.—*From Kootenian, Kaslo, B.C.*

Mr. Hayden Taylor, a dentist of Lincolnshire, swam the English Channel from Cape Gris Nez to Shakespeare Cliff in fourteen hours and fifty minutes on August 23.

In Paris, France, on July 29, there was laid the cornerstone for the Institute of Dentistry and Stomatology, made possible by a grant from the late George Eastman.

FOUR CLASSES OF PEOPLE

Broadly speaking there are four classes of persons: those who cannot pay, those who can pay, those who come in between, and those who are able to pay and do their very best to take advantage of the Government or the dentist not to pay.—*By Dr. Bird, in South African Dental Journal.*

IN MEMORIAM

ROBERT J. McHAIG—of Sherbrooke, Quebec, died early in July and was buried at Coaticook. He was an elder in Trinity United Church and a member of the Independent Order of Odd Fellows. For many years he was an officer and major of the Stanstead Light Dragoons. The loss of his son in the Great War was a great shock and later

failing eyesight necessitated his giving up active practice.

EUGENE BOURGEOIS—of Three Rivers, Quebec, died on August 24, aged 47. He was a former governor of the Quebec College of Dentists.

SECTION FRANÇAISE

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LE TRAITEMENT DES CANAUX RADICULAIRES

par **RAYMOND L. GIRARDOT, D.D.S.,** Détroit, Mich.

Traduction du texte anglais par Jules Hamel, B.A., D.D.S., Québec.
(The Journal of the American Dental Association, January, 1935)

IL y a quelques années, un incident, survenu lors d'une réunion de dentistes, souleva dans l'assemblée un intérêt considérable.—On présenta un cas hypothétique portant sur certaines conditions pathologiques d'une pulpe dentaire.—On invita ensuite chaque dentiste présent à donner son opinion sur le traitement à suivre dans ce cas. Sur les trente-trois réponses obtenues, vingt-trois recommandaient des médicaments différents.

Evidemment, plusieurs de ces réponses furent données à brûle-pourpoint et sans considération suffisante des réactions chimiques et physiologiques produites par les divers médicaments.

A la suite de cet incident, suscité à dessein, plusieurs dentistes de ce groupe

modifièrent leur méthode de traitement.

James E. Aiguier¹ publia, à ce sujet, un rapport intéressant.—Sur trois cents réponses à un questionnaire, il obtint quarante-cinq méthodes différentes pour le traitement des canaux radiculaires.

On trouve encore dans nos revues des articles préconisant certaines méthodes de traitement fondées uniquement sur l'expérience empirique de certains auteurs, sans tenir compte des nombreux travaux de recherche poursuivis par des praticiens avertis, travaux qui ne s'accordent aucunement avec ces techniques préconisées.

1. Aiguier, J. E.: Dental Medicaments; Their Care, Use and Application in Everyday Practice, D. Cosmos, 70:329-339 (March) 1928.

Malheureusement, un trop grand nombre de lecteurs acceptent, sans restriction, ces théories fantaisistes, pour la simple raison qu'elles sont publiées dans une revue dentaire.

Je voudrais étudier, au cours de ce travail, les différents médicaments dont l'efficacité est généralement reconnue, d'autres dont l'usage semble discutable, enfin d'autres employés assez fréquemment mais qui, selon l'avis d'hommes compétents, sont absolument contre-indiqués.

Je m'efforcerai de décrire des procédés déjà établis et basés sur l'expérience de praticiens qui ont analysé les effets de certains médicaments sur les tissus vivants de la dent et de la région péri-dentaire.

Il importe de se rappeler qu'on ne peut juger de la valeur thérapeutique d'un médicament uniquement par la réaction plus ou moins douloureuse qu'il provoque chez le patient; tout comme on ne peut baser un diagnostic sur une infection périapicale uniquement d'après une radiographie révélant la présence de tissus régénérés.

L'étude microscopique de cas dont on connaît l'histoire, et cela plusieurs années après leur traitement, nous fournit des détails très importants. — Considérons maintenant l'ablation d'une pulpe vivante.

Ablation d'une Pulpe Vivante

Nous extirpons rarement une pulpe saine, et même si nous la croyons saine, elle peut être, à notre insu, un foyer microbien. Il est donc logique d'accepter l'énoncé d'Edgar D. Coolidge²:

"Tous les cas requérant un traitement du canal radiculaire doivent

être considérés comme des cas d'infection, puisqu'on enlève rarement une pulpe qui n'est pas profondément infectée."

Comme première précaution nous scellerons dans la cavité un pansement anodin à l'huile de clou, contenant du chloreton. Nous voulons ainsi éliminer toute pulpite déjà existante, stériliser la dentine et aussi diminuer l'infection de la pulpe. Cette stérilisation est très importante, surtout pour ceux qui persistent à employer l'anesthésie par pression.—Le pansement doit être scellé dans la cavité avec un ciment pouvant durcir sur un pansement huileux. Certains ciments ne possèdent pas cette dernière propriété. La gutta-percha est contre-indiquée.

Choisissons maintenant une technique pour l'ablation de la pulpe.—Plusieurs opérateurs emploient encore l'anesthésie par pression, mais depuis les recherches de Blayney³, je préfère adopter ses conclusions, à savoir que l'anesthésie par pression au chlorhydrate de cocaïne, surtout si la cocaïne est en solution de 5% ou plus, peut provoquer des changements destructifs après la pulpectomie, car la cocaïne, à ce degré de concentration, devient un poison protoplasmique.—Selon ce même auteur, l'anesthésie tronculaire ou par infiltration est préférable.

La conception récente de la nécessité de stériliser la cavité avec soin avant la pulpectomie amènera peut-être des modifications aux conclusions de ce travail. D'ici là, on doit chercher une autre méthode.

Plusieurs emploient encore l'arsenic. Dans mon opinion, c'est un poison protoplasmique et nous n'avons aucune

2. Coolidge, E. D.: Discussion of Clinical Results of Root Canal Treatment and Filling, D. Cosmos, 69:1282 (Dec.) 1927.

3. Blayney, J. R.: Medicinal Treatment and Filling of Root Canals, J.A.D.A., 15:241 (Feb.) 1928.

preuve qu'il ne se répande pas au-delà de l'apex. Inglis⁴ soutient le contraire, appuyant ses données sur l'expérience de Miller (avant 1894) qui plaça des anneaux à la racine de la queue d'un nombre de souris.—Cette preuve ne semble plus acceptable à la suite des travaux de Blayney⁵ qui démontra, au moyen de plaques microscopiques, l'action chimique de l'arsenic sur la pulpe, discréditant ainsi l'ancienne théorie qui voulait que la pulpe mourût de strangulation après application d'arsenic.

Dans l'intérêt de ceux qui ne partagent pas ces idées, considérons quelques facteurs dans l'usage de l'arsenic.

Il serait peut-être intéressant de revoir le travail accompli il y a dix-neuf ans par George T. Fette⁶, sur l'usage de l'arsenic.

Par des longues expériences et des formules complexes, il expliqua pourquoi le pentoxyde d'arsenic est moins dangereux à employer et ne cause aucune douleur, même s'il est appliqué sur une pulpe hyperémiée.—Il recommande l'usage de la glycérine pour en faire une pâte.

Je ne comprends pas pourquoi on se sert encore du trioxyde d'arsenic lorsqu'une valence plus forte ne cause aucune douleur. Les recherches ci-haut mentionnées sont corroborées par un article de Bossard⁷, à Paris, rapportant que l'arsenic métallique mélangé avec un

minéral connu sous le nom de "Scherbenkobalt", que certains auteurs ont pris pour "cobalt", est beaucoup moins nuisible que le trioxyde d'arsenic.

Bossard recommande l'emploi d'arsenic à la faible dose de 0.00079 grain que l'on peut obtenir en comprimés sous le nom de "Nervarsen".

Il condamne la pratique dangereuse d'employer le trioxyde sans en mesurer la quantité, "car, dit-il, l'arsenic pénètre non seulement de la pulpe à la dentine, mais il atteint même les tissus osseux environnants, et plus les tissus sont jeunes, plus sa pénétration est rapide". Heinze a démontré qu'après quatre jours, l'arsenic peut être trouvé chimiquement dans le périodonte.

Si on veut se servir d'arsenic, il me semble préférable d'employer une quantité mesurée de pentoxyde, recouverte de papier-filtre de sorte que, pour l'enlever, on puisse le saisir d'un seul morceau sans le répandre dans toute la cavité.

Notre troisième méthode, considérée comme la plus acceptable, est l'anesthésie régionale. Cette méthode présente toutefois un inconvénient: si parfaite que puisse paraître l'anesthésie à l'exodontiste, on rencontrera parfois une certaine sensibilité de la pulpe à l'extirpation, surtout dans les molaires inférieures. L. O. Brightfield⁸ offre une excellente solution à ce problème, en recommandant l'usage d'une anesthésie par infiltration conjointement avec la régionale.

Pour les dents supérieures, la région palatine et la région vestibulaire doivent être anesthésiées. Pour les molaires inférieures, il faut faire, en plus de l'an-

4. Burchard, H. H., and Inglis, O. E.: Textbook of Dental Pathology and Therapeutics, Ed. 7, Lea and Febiger, 1926, p. 460.

5. Blayney, J. R.: Modern Dentistry, January, 1933, p. 29.

6. Fette, G. T.: Higher Valency of Arsenic Versus the Trioxide in Devitalization of Dental Pulp, D. Cosmos, 56:1232 (Nov.) 1914.

7. Bossard, F. J.: Devitalization and Anesthesia, D. Cosmos, 72:148 (Feb.) 1930.

8. Brightfield, L. O.: Eliminating Pain in Root Canal Work, D. Cosmos, 73:79 (Jan.) 1931.

esthésie à l'épine de Spix, l'injection pour l'anesthésie du nerf long buccal.

L'ablation d'une pulpe, je n'en décrirai pas ici la technique, doit être pratiquée avec la plus stricte asepsie. Cette opération est souvent suivie d'une légère hémorragie dans le canal radiculaire. On peut facilement pratiquer l'hémostase au moyen d'une solution aqueuse de chlore, employée pour nettoyer le canal et aussi comme pansement jusqu'à la séance suivante au cours de laquelle on commencera l'alésage mécanique du canal. On doit débarrasser soigneusement la couronne de toute trace de sang, pour éviter la décoloration de la dent. Une erreur fréquente est l'emploi du peroxyde d'hydrogène à ce stage de l'opération, parce qu'en présence du sang, il provoque généralement la décoloration que l'on veut précisément éviter.

A la vue d'une pulpe enroulée au bout d'un tire-nerf, plusieurs praticiens éprouvent une grande satisfaction et croient même l'opération terminée. Je leur citerai l'opinion de Skillen⁹, à savoir que la pulpe n'est pas complètement extirpée à ce moment et que, selon toute probabilité, une grande partie des tissus demeurent attachés aux parois du canal "Et," ajoute-il, "seul un curetage complet des parois du canal peut offrir des garanties de succès".

L'élargissement ne doit pas être commencé à cette séance, en raison du danger de dépasser le foramen apical, vu que les tissus périapicaux sont anesthésiés et que, de plus, le canal radiculaire contenait, en toute probabilité, une pulpe infectée.—Voilà autant d'arguments contre l'obturation immédiate d'un canal

radiculaire, sans compter la grande difficulté pour l'opérateur d'être positif que rien n'est survenu parmi les menus détails de sa technique aseptique pouvant rendre le canal radiculaire moins stérile après y avoir pénétré qu'avant la pulpectomie.

Après l'extirpation d'une pulpe, certains opérateurs placent dans le canal un simple pansement stérile; d'autres emploient un faible antiseptique tel que l'acide borique. Ce dernier est dangereux et devient l'antithèse du formocresol pour assurer une stérilité absolue. A celui qui emploie le formocresol, je suggérerais de placer, pendant deux jours, un pansement de formocresol sur son bras et de le recouvrir de soie cirée. Après cette expérience, ce praticien attacherait, je crois, une plus grande importance aux effets du formocresol sur les tissus vivants.

D'autres encore recommandent l'abstention de toute médication ou pansement dans le canal. D'un autre point de vue, Coolidge¹⁰ condamne cette technique: "après extirpation de la pulpe, la cavité fut scellée, laissant sous l'obturation un canal vide une exsudation et des cellules mortes s'accumulèrent dans le canal et devinrent une source constante d'irritation pour les tissus périapicaux".

Dans le même rapport, Coolidge, au cours de ses expériences sur des chiens, observa que les médicaments pouvant coaguler l'albumine possédaient une action restreinte et pénétraient peu profondément. Il ajoute que l'eugénol et l'eucalyptol provoquent une irritation périapicale, tandis que l'huile de clou produit peu de réaction. Une solution de cresatin et d'hexylrésorcinol qui ne

9. Skillen, W. G.: Morphology of Root Canals, J.A.D.A., 19:727 (May) 1932.

10. Coolidge, E. D.: Reaction of Dog Tissue to Drugs Used in Root Canal Treatments, J.A.D.A., 19:747 (May) 1932.

coagule pas les matières albuminoïdes, pénètre profondément et causa une irritation. Il en conclut que les médicaments germicides dont l'action n'est pas limitée par la coagulation des protéines, ne doivent pas être considérés comme inoffensifs pour les tissus conjonctifs vivants.

Nos efforts pour prévenir l'infection sans irritation sont corroborés par d'autres travaux de Coolidge qui affirme que la possibilité de guérison dépend de l'absence d'infection et démontre qu'après une pulpectomie il se peut produire des dépôts de ciment dans les canaux auxiliaires à l'apex d'une dent. En tenant compte de ces expériences de Coolidge, considérons maintenant quelques suggestions pour le traitement efficace d'un canal après l'extirpation d'une pulpe.

Carl J. Grove¹² préfère une solution à 10% de crésol dans la glycerine. Il explique que la glycerine rend la solution miscible à l'eau en toutes proportions et qu'ainsi elle peut faire mixtion avec les exsudations sériques qui des tissus périapicaux pourraient suinter dans le canal. Avec un médicament possédant ces propriétés, ajoute-t-il, les exsudations viennent s'ajouter à la solution antiseptique et en prennent les propriétés.

Une autre suggestion digne de considération est l'emploi de l'iode. L. O. Brightfield⁸ recommande l'usage d'une solution d'iode à 5% dans l'alcool. Dans un intéressant article, Joel Eisenberg et

Walter S. Frost¹³ conseillent l'emploi de l'iode sous une forme soluble. Avec plusieurs références, ils font remarquer comme fort indésirable la présence de l'iodure de potassium ou de tout autre sel métallique dans l'iode et citent l'iode libre sous forme soluble comme le médicament se rapprochant le plus de l'idéal pour le traitement des canaux radiculaires.

Un autre médicament d'une valeur généralement reconnue est le monochlorophénol camphré. Il semble être considéré par la plupart des praticiens comme le plus efficace. Il dégage lentement du chlore tandis que le camphre modifie l'action caustique du phénol. Prinz¹⁴ rapporte que ce médicament a donné des preuves de supériorité sur tous les agents thérapeutiques mis à l'essai jusqu'ici pour le traitement de canaux radiculaires infectés.

Appleton¹⁵, Werther¹⁶ ainsi que Grossman et Prinz¹⁷ ont tous employé le monochlorophénol camphré au cours de leurs études sur l'efficacité comparative d'un agent thérapeutique et de la médication électrolytique.

Je ferai remarquer à ceux qui obtiennent

13. Eisenberg, Joel and Frost, W. S.: Value of Iodin in Control and Treatment of Dental Infections in Root Canals and Periapical Areas, *D. Items Int.*, 54:833 (Nov.) 1932.

14. Prinz, Hermann: *Dental Materia Medica and Therapeutics*, St. Louis: C. V. Mosby Company, Ed. 6, 1928, p. 171.

15. Appleton, L. L. T., Jr.: Attempt to Formulate Policy on Management of Pulpless Tooth, *D. Cosmos*, 75:136 (Feb.) 1933.

16. Werther, Raymond: Use of Electrolytic Therapy in Treatment of Periapical Infection, *D. Cosmos*, 74:329 (April) 1932.

17. Grossman, L. I., and Prinz, Hermann: Comparative Study of Root Canal Therapy and Camphorated Chlorphenol and with Electro-Sterilization, *D. Cosmos*, 74:327 (April) 1932.

11. Coolidge, E. D.: Reaction of Cement in the Presence of Injury and Infection, *J.A.D.A.*, 18:514 (March) 1931.

12. Grove, C. J.: Simple Accurate Procedure for Treating and Filling Root Canals, *J.A.D.A.*, 17:1634 (Sept.) 1930.

les canaux avec de la chlororésine, d'après la méthode de Callahan, que le monochlorophénol est de nature huileuse et qu'aucun pansement huileux ne devrait être employé dans un canal radiculaire destiné à être obturé d'après cette technique de Callahan, car la substance huileuse enrayerait la diffusion de l'alcool et du chloroforme dans les canalicules de la dentine.

Considérons maintenant les effets du chlore comme traitement après l'extirpation d'une pulpe vivante. Une description de son action par Blayney¹⁸ serait peut-être à propos. Ce dernier prétend que le chlore s'attaque à la molécule de protéine de la bactérie en remplaçant son atome ou ses atomes d'hydrogène; la plus grande partie du chlore dégagé agit sur l'eau à cause de son affinité pour l'hydrogène et la molécule d'eau est ainsi décomposée libérant l'oxygène qui, à son tour, oxyde les produits bactériens.

Je me permettrai ici d'exprimer ma préférence pour une solution de chloramine T soluble dans l'eau. On doit verser une once à la fois de la bouteille originale dans un petit flacon compte-goutte de couleur ambrée, bouché à l'émeri. Pour s'en servir, on doit verser une petite quantité dans un godet en verre Dappen, puis jeter la portion inemployée.

Il est important de ne pas souiller le goulot du flacon compte-goutte et d'essuyer les bords de la bouteille originale après s'en être servi. Coolidge¹⁹

suggère la formule suivante pour une solution aqueuse:

Chloramine T (U.S.P.).....	5 gm.
Chlorure de sodium.....	0.8 gm.
Hydroxyde de soude.....	00.5 gm.
Eau distillée q.s. ad.....	100. c.c.

Je désapprouve l'emploi de la dichloramine T dissoute dans l'huile. En plus d'être très difficile à préparer elle se décompose rapidement dégagant de l'acide hypochloreux, agent très irritant.

Les précelles ou les restes d'amalgame laissés dans la cavité ne doivent pas venir en contact avec la solution de chlore, si l'on ne veut pas que cette solution devienne inerte et sans valeur germicide. On peut employer des précelles en stellite ou en bon acier inoxydable.

La chambre pulpaire doit être inondée de cette solution après avoir placé au préalable une pointe absorbante dans le canal. Cette pointe est retirée brusquement et le vide ainsi produit fait monter la solution dans le canal.

On doit se rappeler qu'un pansement imbibé d'une solution aqueuse de chlore ne doit pas demeurer dans le canal plus de vingt-quatre heures et que, si le patient ne peut revenir dans ce délai, un autre agent doit lui être substitué.

Au retour du patient, il arrivera parfois de constater une certaine sensibilité causée par des restes de tissus vivants dans le canal radiculaire. Lorsque l'opérateur est assuré par contrôle roentgenographique qu'il ne dépassera pas l'apex, il peut plonger un fin foret dans le phénol et l'introduire dans le canal pour extirper les restes de tissu pulpaire. Si ce procédé ne suffit pas, un pansement imbibé de phénol peut être scellé dans le canal.

Résumons les agents thérapeutiques considérés comme acceptables après l'ex-

18. Blayney, J. R.: Medicinal Treatment and Filling of Root Canals, J.A.D.A., 15:239-243 (Feb.) 1928.

19. Coolidge, E. D.: Pathology, Diagnosis and Treatment of Pulp and Preparation of Root Canals for Filling, J.A.D.A., 19:1981 (Nov.) 1932.

tirpation d'une pulpe vivante: la solution aqueuse de chlore, le monochlorphénol camphré, l'iode (tel que décrit), le crésol à 10% dans la glycérine et l'huile de clou.

Les pulpes putrescentes

La chambre pulpaire doit être ouverte largement si la dent n'est pas hypersensible. Elle doit être ouverte suffisamment pour permettre le drainage et l'échappement des gaz sous pression. La chambre pulpaire doit être complètement nettoyée avec une solution aqueuse de chlore puis les matières organiques accessibles peuvent être enlevées, pourvu que l'on n'exerce aucune pression sur ces substances.

C'est ici l'occasion unique où l'emploi du formocrésol est indiqué et Buckley²⁰ donne une excellente explication de ses effets. Une boulette de papier légèrement imbibée de cet agent peut être scellée dans la chambre pulpaire avec un ciment temporaire.

A la visite suivante, si le patient se dit soulagé de toute douleur, la chambre pulpaire sera nettoyée de nouveau avec la solution chlorée, puis les canaux seront lavés et les particules organiques enlevées au moyen d'un tire-nerf très fin.

Considérons maintenant une intéressante suggestion de Grove¹² au sujet du chlorothymol composé d'hydrate de chloral et de thymol à parties égales avec de l'acétone en quantité suffisante pour les maintenir en solution. Le thymol est employé pour son action germicide; l'acétone dissout les corps gras et augmente ainsi l'efficacité du thymol. Grove soutient que l'hydrate de chloral se

mélange chimiquement avec les gaz de putréfaction.

Après avoir débarrassé les canaux de toute matière organique, les agents thérapeutiques suivants peuvent être considérés comme acceptables pour la stérilisation de la dentine et des tissus apicaux: la solution aqueuse de chlore, le monochlorphénol camphré, le chlorthymol ou l'iode (tel que décrit). Notre choix serait la médication électrolytique. Appleton¹⁵, Werther¹⁶ ainsi que Grossman et Prinz ont tous démontré que l'ionisation ne requerrait que la moitié du nombre de traitements nécessaires avec le monochlorphénol camphré. La médication électrolytique n'a pas été employée aussi couramment qu'elle aurait dû l'être parce que le temps nécessaire pour son application devient très coûteux. Toutefois son efficacité deux fois plus grande que celle des autres agents devrait contrebalancer cet inconvénient et lui donner une plus grande importance dans la thérapie des canaux radiculaires.

Une autre objection se rencontre dans le coût élevé de l'appareil mais avec un peu d'ingéniosité, un potentiomètre, un milliampèremètre et l'emploi d'un circuit non balancé avec une résistance fixe, on peut fabriquer un instrument au contrôle plus délicat que celui des instruments dispendieux actuellement sur le marché.

Les investigateurs ci-haut mentionnés ont aussi démontré que cinq ou six traitements au monochlorphénol camphré sont nécessaires avant de pouvoir retirer un pansement stérile de dents infectées à un point tel qu'elles méritaient d'être vouées à l'extraction.

Dans la technique pour l'élargissement des canaux, certains opérateurs recommandent l'emploi de l'acide sulfo-

20. Buckley, J. P.: Dental Materia Medica and Therapeutics, Philadelphia: P. Blakiston's Son & Co., Ed. 5, p. 74.

chlorhydrique et même de l'acide nitro-chlorhydrique. Pour les canaux difficiles, je comprends l'utilité de l'acide chlorhydrique en vue faciliter leur alésage. Cependant, si l'apex est accessible, l'usage de cet acide devient contre-indiqué.

Je ne puis admettre avec d'autres que l'acide chlorhydrique soit un bon tonique pour les tissus apicaux. Je citerai à ce sujet l'assertion de Blayney²¹ à l'effet que dans le traitement de ces cas, il ne faut pas oublier les conditions pathologiques existantes et que pendant le traitement on doit épargner à cette région inflammée tout traumatisme mécanique ou chimique.

Des pansements de stérilisation doivent être employés avant d'enlever une vieille obturation radiculaire et le chlore me semble le meilleur agent en pareil cas.— Après l'obturation de la racine, lorsqu'une partie de la substance obturatrice est

enlevée, pour préparer l'insertion d'un pivot, on ne doit jamais placer dans cette cavité un pansement huileux parce qu'il aurait pour effet de dissoudre ce qui reste de l'obturation radiculaire. Le métaphène paraît très recommandable en cette circonstance.

Quelques conseils pour terminer: N'employez jamais de coton hydrophile dans les canaux radiculaires. Stérilisez les pointes de papier après les avoir sorties de la boîte dans laquelle elles vous sont fournies; coupez-en le bout si elles sont susceptibles de traverser l'apex. Ne forcez jamais un médicament à travers l'apex en en faisant usage d'une trop grande quantité. Ne laissez pas vos traitements s'éterniser, ni se multiplier inutilement. Scellez bien en place tous les médicaments. Considérez les substances germicides utilisées pour l'obturation des canaux comme de simples médicaments et non des obturateurs permanents si elles sont diffusibles.

21. Blayney, J. R.: Apical Tissue Reaction to Treatment, J. D. Res., 9:239 (April) 1929.

RESTAURATION D'UNE INCISIVE CENTRALE FRACTURÉE

LE Docteur Maurice Roy raconte, dans le numéro de juillet, 1935, de la revue "L'Odontologie", comment il a procédé à la restauration d'une incisive médiane fracturée chez un enfant de onze à douze ans. La fracture s'était produite à mi-hauteur de la couronne et avait mis la pulpe à nu.

Le docteur extirpe la pulpe et, après les traitements nécessaires, obture le canal radiculaire.

Comme le morceau fracturé s'applique parfaitement à la partie restante, notre confrère faite à la surface de section de ce fragment de dent, avec un foret fin, deux petits trous dans lesquels il place deux petites goupilles de platine irridiées de grosseur correspondante, puis il prépare, en conséquence, l'orifice du canal et scelle le tout en place.

Résultat absolument parfait et l'enfant, depuis deux ans, censure sa dent ainsi

restaurée. Il y a une petite différence de teinte entre le fragment et le corps de la dent, différence qui s'est atténuée par la suite. La partie restante de la dent était devenue un peu grisâtre, conséquence de la mortification pulpaire, tandis que le bord incisif avait presque conserve sa

teinte naturelle depuis sa mise en place.

Ce moyen de restauration méritait d'être signalé car il semble toujours regrettable de mettre une dent sur pivot ou une couronne Jackett dans la bouche d'un enfant.

P. H.

RETARD D'ERUPTION DENTAIRE ACCELERE PAR LES RAYONS U. V.

M. THESEE (Brest) dans la revue de Stomatologie, numéro d'août, 1935, (p. 527) signale le succès obtenu avec les rayons ultra-violetes chez une jeune fille de huit ans dont les incisives n'ont pas encore fait leur apparition dans la cavité buccale.

Il place la lampe à 30 centimètres de la patiente, enduit les lèvres et leur pourtour de vaseline et recouvre les yeux de lunettes noires.

Première séance: deux minutes;

Deuxième séance: trois minutes;

Troisième séance: quatre minutes;

Quatrième séance: cinq minutes.

Les traitements se donnent à tous les lundis, mercredis et vendredis.

L'enfant reçoit dix traitements, mais dès la troisième séance il apparaît évident que les dents se sont mises en mouvement. En moins de quatorze jours après le premier traitement, les incisives supérieures ont percé la muqueuse de même que l'incisive inférieure gauche. Puis l'évolution de la dentition se continue.

L'auteur conclut que les rayons ultra-violetes ont facilité et activé l'éruption dentaire dans ce cas qu'il considère comme très probant.

P. H.

DYSTROPHIES DENTAIRES ET HEREDO-SYPHILIS

M. LAMARCHE, professeur à l'Ecole de médecine de Rennes, a présenté, au Congrès Odonto-Stomatologique de Lille, le résultat de ses observations pendant six ans sur 1,600 enfants, de façon à établir l'importance

des rapports entre les dystrophies dentaires et l'hérédosyphilis. Il cita des cas de malformations sans hérédité et termina en affirmant qu'il n'existe pas de signes pathogomoniques de syphilis dentaire.

DOCTEUR GEO. VILLAIN

LE Docteur Geo. Villain, directeur de l'Ecole dentaire de Paris, vient d'être promu officier de la Légion d'hon-

neur par le ministère de la Santé publique. Nos plus sincères félicitations au nouveau décoré.

P. H.

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Representation — A. W. Faulkner.....Halifax, N.S.
Necrology — J. E. Blanchard.....Charlottetown, P.E.I.
Empire Convention — F. J. Conboy.....Toronto, Ont.
Co-operative Organization — Denis Forest.....Montreal, P.Q.
Research Committee — R. J. Reade.....Toronto, Ont.



"The most precious possession in life is good health. Eat moderately, breathe deeply, exercise outdoors, get eight hours sleep and cultivate charm of manner, as a business proposition."





HARRY S. THOMSON, D.M.D.
Field Secretary, Canadian Dental Hygiene Council.



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ORAL CANCER AND THE DENTIST

by GEORGE McNEILL, M.D., F.A.C.S.,* London, Canada.

ORAL cancer is of the greatest interest to members of the dental profession and its systematic study should be encouraged, both from a prophylactic and diagnostic point of view. This refers primarily to cancers of the buccal mucosa, of the palate, alveoli, cheeks and floor of the mouth. The dental surgeon is usually the first to observe many of these cases, and early recognition is essential to successful treatment.

Chronic irritation is one accepted theory of the aetiology of cancer, consequently we must look upon insanitary mouths and teeth, misfitting and irritating dentures, or dentures that become so; misplaced and broken teeth and many other conditions which set up a chronic irritation, as the most important causes of cancer of the mouth. Also, we must seek the co-operation of the dental surgeon in producing for us the apparatus for applying radium in a technically correct and scientific manner, if we hope to be successful in the treatment of this most serious malady.

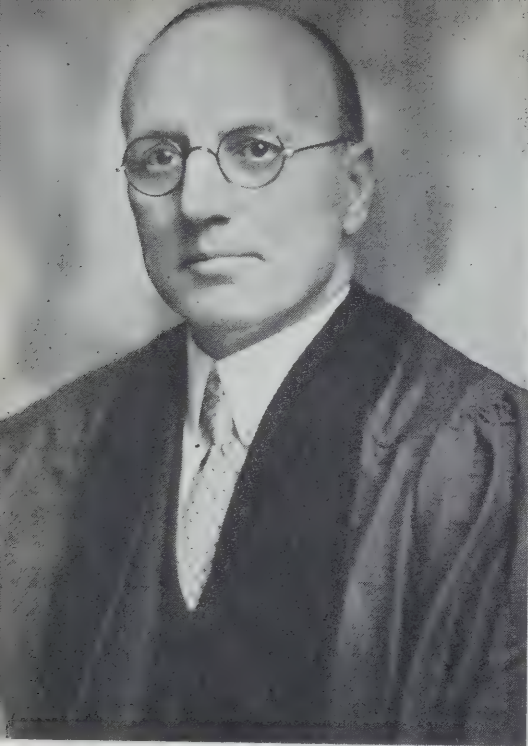
When these cases occur the mouth must be thoroughly prepared before radium is used, because sepsis is cancer's greatest ally and radium's worst enemy. All decayed or broken teeth should be ex-

tracted, except when actually in the cancerous area, when extraction would cause trauma to bone already exposed to malignant invasion. All sources of infection should be eliminated and thorough cleansing of the mouth instituted several times a day before treatment is commenced.

In the hard palate and alveolus the bone is covered by periosteum, a thin layer of areolar tissue and finally by the mucous membrane. The tissues are quite thin and in very close contact with the adjacent bone, and when once the malignancy has developed in the mucous membrane, it has but a very small thickness of tissue to invade, before there is bony involvement, and, when this once occurs, the outlook is dark and hazardous.

The usual type of malignancy in these situations is the squamous cell carcinoma, with sometimes a carcinoma of less differentiated type. It is the general rule that the squamous celled type prevails in the anterior portion of the mouth, but proceeding posteriorly the less differentiated type increases in incidence, until at the base of the tongue and pharynx the latter type predominates. The squamous cell carcinoma is, of course, more radio-resistant than the less differentiated type,

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GEORGE McNEILL

but it is equally more hesitant in producing metastases in the neighbouring lymphatic glands. Conversely, the less differentiated types melt away readily with radiation treatment, being very radio-sensitive, but attack the glands very early, and at times this is so marked that glandular involvement is the first sign of the disease. Metastases are vastly more radio-resistant than the original focus in either type. Few are the cures after secondaries have developed, hence the necessity for early diagnosis of the primary lesion.

Several methods of treatment have been used, and in turn have been abandoned, until today radium is the method of choice, and has been established as the most successful. This has been accomplished by adopting the methods in use in superficial lesions of the skin to similar lesions of the superficial cavities; particularly with the type of applicator as used by the Curie Institute and which has been improved by Cutler.

In using radium it is quite necessary to remember the anatomy of these parts, for while the malignant invasion has such a thin area of tissue to traverse before affecting the bone, so, also, this layer of tissue renders the insertion interstitially of radon seeds and of radium needles, very unsafe, because of the very great probability of producing necrosis of the bone, with infection following and resulting in osteomyelitis. Thus, it is so important that opportunity be given to the normal tissue to recover itself as far as possible during treatment by utilizing distance between the source of radiation and the site of the lesion, limiting the daily hours of exposure, using a small quantity of radium over a longer period of time and heavy filtration in order to employ only the gamma ray.

The area of the lesion should be carefully measured, and the area to be treated should extend a full centimetre beyond the limits of the lesion itself, and a small lesion should receive a larger dosage than where the area of the lesion is of considerable size, because of the extra cross-fire radiation which takes place from the multiple sources of radiation. These facts are well established and can be found quite readily by consulting recent writers on the subject. Should the lesion be of considerable density, 1 cm. or more, and of the hypertrophic type, the interstitial method of treatment could be used, for the tumour tissue itself would then act quite desirably as a filtering agent. The question of time is quite important. The optimum time is said to be from five to ten days, but should the time be ex-

tended unduly, radio immunity is established and the effectiveness of the method destroyed. Again, distance of the radium from the lesion enhances the quality and value of the resulting ray. These considerations, together with adequate filtration render the chances of necrosis of bone less probable, with a more moderate and gentle reaction in the surrounding tissues, destruction of the neoplasm more certain, healing with less scarring, resulting in smooth, soft tissue at the site of the lesion, and with much less tendency to recurrence.

It is true that some time is lost in pre-

paring such applicators as suggested and that the cost is increased to the individual, but the accuracy of dosage and precision of application to the lesion, far outweigh any such objection; also the greater protection to the unaffected parts and the physical comfort during treatment are enhanced.

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*WHEREIN we present a fine
piece of research by one of the
younger men of our profession.*

INTRA ORAL RADIUM APPLICATOR

by F. F. BAKER, D.D.S., London, Canada.*

IN the accompanying article Dr. George McNeill, Radiologist, outlines the possible applications of a dental appliance in the treatment of malignant lesions of the oral cavity. It would seem that at the present time, radium is the best treatment available for malignancy and it is possible for the dentist to contribute something toward the treatment of lesions occurring in the oral cavity. The early recognition of possible malignant lesions by the dentist, and the elimination of possible contributory factors such as ill fitting dentures, crowns, overhanging fillings, etc., cannot be

stressed too forcibly. Figures 5 and 7 show lesions which resulted from ill fitting dentures. In these cases in all probability the dentures did fit when they were constructed, and so it becomes necessary for the dentist to insist upon the rebasing of dentures as soon as the need is apparent.

The technique involved in the construction of this radium applicator for use in the oral cavity, is quite simple and may be adapted to any area in the mouth and quite possibly to many areas out of the mouth.

A compound impression of the arch

*We have here one more illustration of fine co-operation between the medical and dental professions, by which the general public benefits.—EDITOR.

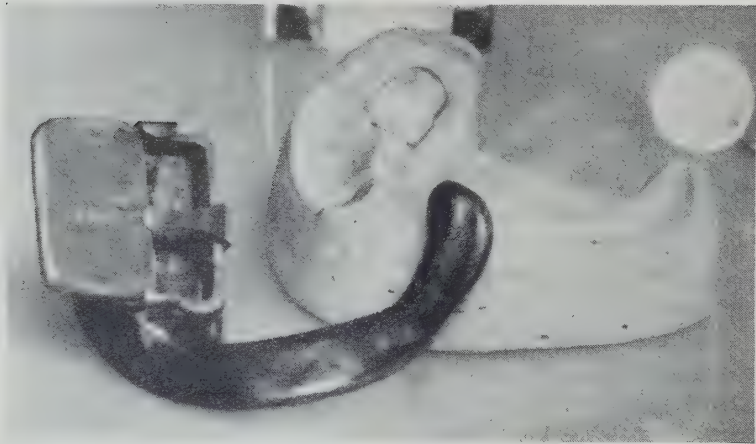


Figure 1.

involved only is necessary and extended well beyond the lesion to be treated. Whenever the size and location of the lesion will permit, it is well to expose a full centimeter in all directions, to the radium.

The case illustrated in Fig. 1 shows a squamous celled epithelioma in the region of the mandibular third molar which resulted from an undiscovered impaction. Fig. 2 shows the appliance in place in the mouth.

A lead box is then constructed, with-

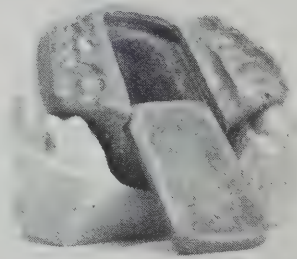


Figure 3.



Figure 2.



Figure 4.

out a bottom, preferably cast for better adaptation, the size of which will be determined by the area involved by the lesion, and the size and number of radium capsules to be used. In this case (Figs. 1 and 2) four capsules were used which were 22 millimeters long by 3 millimeters in diameter. The box measurements were 3 centimeters by 2 centimeters. The depth must be sufficient to accommodate these capsules 7 millimeters away from the tissues plus a little clearance for the capsules and may vary from 12 millimeters to 18 millimeters. With the lead box in place the splint is waxed over the model. In an edentulous case the base plate would be extended over the whole ridge (Fig. 4) but when teeth are in place as in palatal case (Fig. 3), it is only necessary to extend a sufficient distance to stabilize the appliance.

The lead box is removed and the waxed splint vulcanized and polished. The box is then replaced in the splint and the bottom is built in Columbia compound or wax to provide a flat seat for capsules, 7 millimeters from the tissues.



Impression compound may be used where considerable carving is necessary to accomplish this. It only remains now to provide a top for the box which may be readily removed. Cleats of thin copper or brass may be soldered to the box such as has been done in the accompanying figures which permits the top to slide readily to place where it is held firmly in position. The completed box is sealed into place with wax and the appliance is ready for use by the Radiologist.

Secondary rays will penetrate the lead

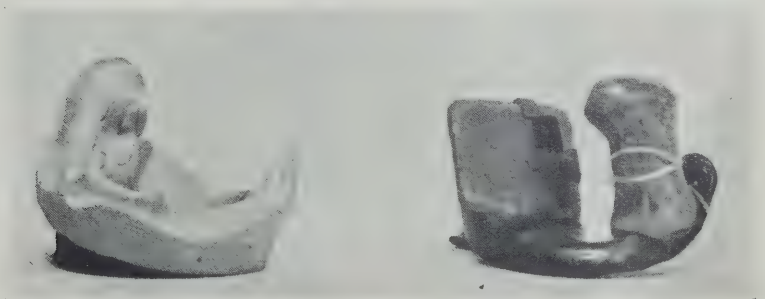


Figure 5.

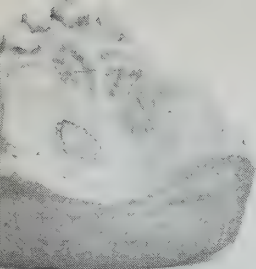


Figure 6.

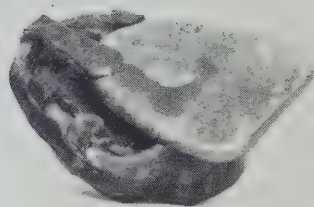
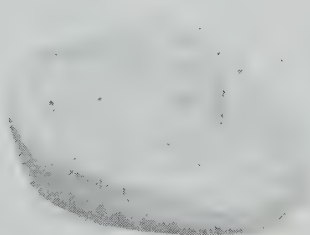


Figure 7.

causing a certain amount of surface destruction of tissue. These may be controlled by covering the box with base plate wax. In cases where the position of the box necessitates maintaining a wide open position of the mouth by the patient a bite block may be carved in compound as shown in Fig. 5 and with

was carved completely in wax except for the sliding top which was cut to proper size from sheet lead, vaselined and adjusted to place so that it would slide easily into position. It is desirable to hold the tongue as far away from the box as possible for greater protection, and in some cases this may be accomplished by extending the compound bite block as shown in figures 4 and 6.

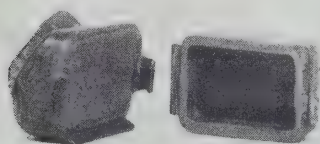


Figure 8.

Fig. 7 shows a very extensive palatal lesion and the appliance constructed for its treatment in the hope that the progress of the disease might be somewhat retarded. Fig. 8 suggests how an appliance might be adapted to expose an involved area in the cheek.

this in place, the jaw bandaged. This will relieve all strain and the patient will not be particularly fatigued by the necessarily long and tedious treatment periods. In other cases it is possible to provide a bite in the splint as in Fig. 3 which shows an appliance made entirely of lead in one casting operation. The appliance

Naturally each lesion will have its own distinct peculiarities and will need to be constructed to suit the case, but it would seem that such an applicator as described has great possibilities in the control of that dread disease, cancer, when it occurs in the oral cavity.

220 Dundas Street.

UNDERSTANDING THE CHILD

by S. A. MacGREGOR, D.D.S., Toronto, Ontario.

IT is a well-known fact that in the business world, industries take inventory at least once a year. Directors are called together to discuss both the personal and the business methods of the company. Is it not just as necessary, in order to insure success, that we in the profession of dentistry take inventory of the systems used in our offices? We must try to visualize ourselves as an outsider, looking in on the one that puts this system into effect. When companies take inventory, they make a thorough study of every phase of their business. If any part is being neglected their interest is concentrated on that particular branch in an effort to raise it to the same level as the rest of the business.

In dentistry we all have our likes and dislikes, in so far as the different specialties are concerned. Periodically we should make a survey and determine whether we have been too absorbed in the construction of artificial dentures and bridge-work and have forgotten that phase of dentistry—the care of the deciduous dentition,—which would tend in later life to make artificial appliances unnecessary.

In this paper I plan to discuss children's dentistry and the method I, as a general practitioner, use in my office. One very important factor that the dentist must realize is that the care of the child's teeth is the fundamental basis upon which the assurance of a healthy adult dentition is built.

IMPORTANCE OF DECIDUOUS TEETH

In order then to be sincere in the care of the deciduous teeth, one must put it on

a par with the care of the permanent teeth. I think the reason for the lack of interest in the care of the deciduous teeth, both by the dentist and the laity is that the dentist has spoken of them as temporary. In speaking of them as such we have built up a barrier in the minds of the laity that is very difficult to remedy, and as a result the dentist has lowered his fee to a degree, where he cannot afford to take the time to make a proper restoration and as a consequence the child suffers.

To raise children's dentistry to that level where it rightfully belongs, we must concentrate on three factors, namely, (1) The dentist himself must be convinced that the care of the deciduous teeth is just as important as the care of the permanent adult teeth.

(2) He must educate the parent to realize the importance of the deciduous teeth.

(3) He must charge a fee that will allow him to restore the child's mouth to the best possible condition of health.

SYSTEMS USED

In an effort to bring about this transition in my own office I find that it is necessary to keep continually checking the systems used in caring for the young patient. The following questions are forever in my mind:—

(1) In my office is children's dentistry on a par with adult dentistry?

(2) Do I attempt to observe and understand children?

(3) Is my office a suitable environment for children?

(4) Am I succeeding in educating



S. A. MacGREGOR

the parent as to the importance of the care of the deciduous teeth?

(5) Do I attempt to educate the child?

(6) Is my nurse assisting me to elevate children's dentistry to that plane to which I think it belongs?

(7) As in adult dentistry, do I make a proper diagnosis, i.e.,

(a) Do I check up on occlusion?

(b) Do I check up on habits?

(c) Do I advise a restoration suitable to the particular condition, or do I advise something inferior, because I feel that a low fee would be pleasing to the parent?

PSYCHOLOGY

To work with children successfully one must be able to treat each child from a psychological standpoint and to do this one must understand the child. The modern psychological theory is emphatic

on this point, wherever treatment of any kind is necessary.

Every dentist should make an effort to have a corner of his waiting room equipped with furniture suitable for children. In my office I have a little table and chair perfectly in keeping with the type of adult furniture (Fig. 1). On the table the child finds, "Mickey Mouse", "Child Life", "Junior Home", "Animal Life", "Popular Mechanics" and "Believe It or Not". I do not believe in the introduction of toys or play rooms in a dental office. Such an environment, to my mind, tends to place the dentist in the background. I am more anxious that the child become interested in me, hence I feel that in some way I must play the role of a toy. I do this through the medium of tricks, jokes, etc. However, I do admit that not every one can do tricks and in this paper if I emphasize this method, I am doing so, not to encourage you to attempt such a procedure, but merely to bring out one very important factor, namely, that the dentist use his intuition to choose a method whereby he can be a toy suitable to his personality.

To illustrate what can be done by one who cannot do tricks, let me tell you of an experience I once had in a dental office. I had gone in to see the dentist, who was a personal friend, and on entering I heard quite an argument between the dentist and a boy of ten or eleven years, about the answer to some riddle. The dentist seemed to be getting the better of the discussion, so the lad left.

Understanding the Child

I was seated in the waiting room, while the dentist operated on another patient. Not long after the dentist left the waiting room, the lad returned and stood pondering over something. Finally he opened the operating room door and shouted another answer to the riddle under discussion. Not having won his battle he trotted off again and as he went down the hall, I could see a look of determination that said, "I'll get you yet". This lad would be anxious to return. If such a method is used, I feel that the dentist becomes the hero in the picture.

RECEPTION OF CHILD

The child on entering the waiting room is greeted by the nurse: but, she does not stay to play with the youngster, for in so doing she may interfere with the adjustment of the child to the environment of the office. I make it a practice to have the nurse introduce me to the child in the waiting room. In this way one leaves such possible objects of fear as the chair, the engine, etc., out of the picture. If one puts forth every effort to make a personality contact with the child, the white gown will not be noticed. I usually show the child a trick in the waiting room or win him or her in some such manner, so that I will create the desire to see more of me. So on entering the operating room, I am the central object and the other possible objects of fear are in the background.

On meeting the child in the waiting

room, I endeavour to determine in my mind the type of child and the method I must use in making the required personality contact. Deceit in the dental office means utter failure. I show the child step by step what he may expect. For instance, I do this by showing him the rubber cup and allowing him to feel it. If confidence is established I give prophylaxis. I always invite the parent into the operating room, for in so doing there is a greater resistance of the child toward fear.

EDUCATION OF PARENT

If all has gone well in the prophylaxis, I attempt to educate the parent. I cannot place too great an emphasis on this important factor. Explain occlusion; inquire as to habits; explain what habits do and emphasize the use of deciduous

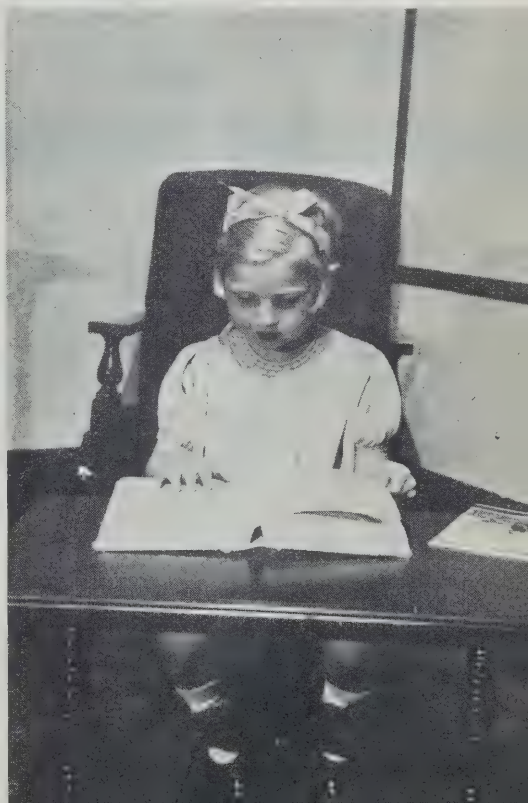


Figure 1.

The CHILDREN'S OWN BOOK



Figure 2.

teeth. After having built up a stronghold in the mind of the parent as to the importance of deciduous teeth, then make clear to her your diagnosis. Explain and justify the best type of restoration for this particular case; then estimate your fee. If you attempt in this manner to impress the parent with the importance of the care of the deciduous teeth, she will realize the fee must be such that will enable you to give your best service. You will have a satisfied patient who will sing your praises in the district. However, if one does not realize his responsibility in telling this story and in a "hum drum"

manner begins to put in fillings at a dollar par, one cannot hope in the end to meet with success. Having finished the prophylaxis at the first appointment, the child is taken to the business office by the nurse and is shown the requirements for our Birthday Club.

BIRTHDAY BOOK

We have a birthday book (Fig. 2) in which the child puts his picture and fills out certain questions, such as "My name is", "My birthday is", "My favourite game is", etc. (Fig. 3). The nurse gives him a calendar, on which he charts his

Understanding the Child

morning, noon and night brushings. He is always anxious to bring in the calendar when it is full and this aids in a recall. The nurse will send him a birthday card and a Christmas card. Whenever the nurse is attempting to gain the confidence of the child, I stay out of the picture and I expect her to do likewise when I am establishing a contact. I think it is a very poor practice to allow the nurse to remain beside the child, while I am operating. It tends to distract the child.

As in theatres I endeavour to create the desire on the part of the child to return. Instead of putting on a western serial and stopping at a psychological point in the picture, I attempt to run a

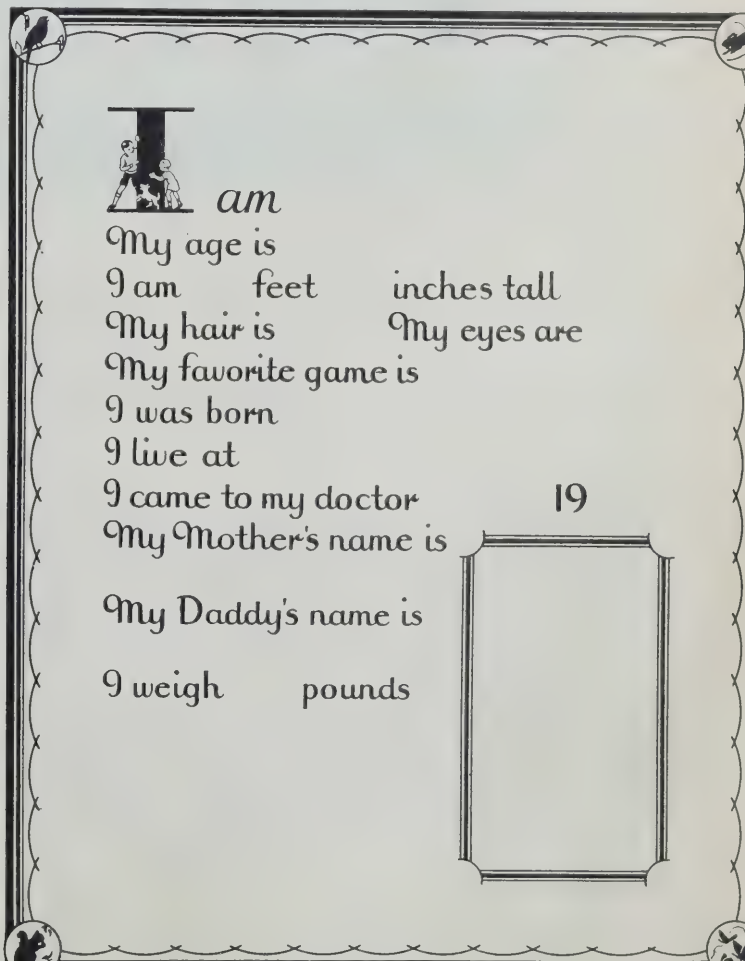
serial in the office by showing half a trick, using a conundrum or a riddle with some catch to it. This, in my experience, gives the child a desire to return and "get you" on one.

VARIOUS TYPES

There are at least four types of children, as I see them in the office, namely,

- (1) The "Regular Guy" in boys.
- (2) "Tom Boy" type in girls.
- (3) Affectionate type.
- (4) Resistant or Negative type.

The "Regular Guy" is usually very easy to handle. With this lad I use a boxing gesture or some such sign of assuring him that I like to be a regular



I am

My age is _____

I am _____ feet _____ inches tall

My hair is _____ My eyes are _____

My favorite game is _____

I was born _____

I live at _____

I came to my doctor _____

My Mother's name is _____

My Daddy's name is _____

I weigh _____ pounds

19



Figure 3.

guy also. Use conversation that tends to produce an argument. It gives him a chance to show you "He can take it". Tease him about his girl friend or some such fictitious story. His dress usually indicates his type—long boots, badges, etc. This boy will very seldom be found occupying the child's corner.

The "Tom Boy" type in the girl is very similar to the "Regular Guy" in the boy and I treat her in a similar manner. To illustrate how sometimes I create an argument with this type, let me tell you of a child whose parents were buying a new home. She was just as interested in the outlook and plans as the parents. On one appointment I commenced telling the nurse of a tumble down shack I saw on the street on which I knew she lived. I was careful not to bring her into the conversation, but she knew to which I was referring, and asked me if it was number 123. Not knowing her object, I said "Yes". She replied "Goody, we live at 184". This trend of conversation tends to interest a child of this type and make her anxious to return.

With the affectionate type I move very slowly. Respond to the child's desires as they come. Do not do much at a time. I use affectionate gestures and terms, and parents will not object if it is sincere.

The resistant type is one that is a source of worry to all of us, and probably is one reason for the lack of interest in children's dentistry by many. I find this type will not look at my tricks or listen to my conundrums. Every child has underlying impulses, to which we may appeal and this child is usually of a jealous nature, so I bring other children into the picture. The nurse usually makes fake appointments for two or three

other children for the same time as the difficult child and when all have arrived, I go out to the waiting room and show tricks to the others ignoring very coldly the resistant child. Very soon the youngster will give way and look at the performance, which he refused to become interested in the day before. The children are taken to the operating room and usually I create enough interest in the appointment to have the problem youngster follow us in and if a fake operation is done on one of the other children, we very often get the resistant child into the chair. With this type adjustment is slow and every procedure must be carefully explained. Very often this resistant child will allow you to do a certain amount of work and then all of a sudden, refuse to allow you to do more. When such occurs you must begin all over to teach the child. You have probably gotten along well and taken the child for granted, bringing some new instrument into the picture without an explanation. If you attempt to carry on without again gaining the child's confidence, failure will be the result. I am very much against the use of force with any type of child.

OPERATIVE PROCEDURES

I very seldom use a local anaesthetic for extraction with any type. The usual method adopted is to send the child to an exodontist for a general anaesthetic. In this way he returns to you without any ill feeling and the treatment can be successfully completed.

I never attempt to treat a devitalized deciduous tooth, for I feel that there is only one way to produce a field free of infection and that is by using the rubber dam. With a child I think that is im-



Figure 4.

possible. If the field cannot be absolutely free of infection, then the tooth is better out, for it will no doubt tend to lower the child's resistance at a time when he needs it most.

As to the extension of the cavity preparation in pits or fissures, I extend the full length of the fissure when I am quite certain that I will not interfere with the psychological treatment of the child. It is better to clean out the field of decay, extend as far as possible, put in a permanent restoration and instruct the parent to keep the remainder of this fissure clean as nature intended, than produce a condition that will tend to lose the confidence of the child for future work.

Child education is carried out on the last appointment. I attempt to do this by means of models. I represent decay by little red characters as illustrated (Fig. 4).

In (I) I tell the child that the little imps have to live in pastures where sweets and starchy foods are and with hammers and chisels they attempt to destroy the tooth. Pretty soon the nerve makes a face—toothache.

In model (II) they kill the tooth, by pouring their eggs down a funnel and block the drain that carries the blood. The result is the face swells up.

In model (III) decay spreads. The

little imp sits in a bad tooth and chisels a good one.

In model (IV) the little imps chisel on the tooth because it is dirty. It is very sad. The clean tooth is happy.

In model (V) the imps are seeking more territory.

In model (VI) they have dug out a home and the whole inside is gone before you know it.

In model (VII) the clean tooth brush is in action. One imp is killed; one is waving a flag of truce and one is running away.

In model (VIII) there are two killed, one is wounded and one has a bow and arrow.

In model (IX) we see the dirty tooth brush having no effect. The little imps are dancing all over it and having a merry time.

In closing I might say I carry out such a procedure in my office. I have found it very successful and I am able to practise in a happier environment.

3054A Yonge St., Toronto, Ontario.

NOTE ON TEETH IN HIPPOCRATES

by THE HONOURABLE WILLIAM RENWICK RIDDELL, LL.D., D.C.L., &c.

IN THE altogether too short summer vacation from the active duties of a busy life, I seek to renew my acquaintance with the languages of ancient Greece and Rome which I learned to love more than six decades ago in "Old Vic" in my beautiful town of Cobourg, under the teaching of the exigent but lovable "Old Trin," whose memory is dear to a class now greatly diminished and, indeed, almost at an end.

This year I took with me to the Sea, a copy of the *Aphorisms of Hippocrates* in the beautiful 32 mo. edition of Dr. Anna Car. Lorry, published in Paris in 1784. This edition, it may be said, is chiefly valuable from its illustrations by parallel passages from Celsus, Baerhave, and Van Swieten. The translation by the editor

in this book into Latin is creditable—but I shall translate direct from the Greek.

Hippocrates was, of course, for centuries almost a demigod with practitioners of Medicine—it was enough to say, "Hippocrates says," just as from a later period it was enough to say, "Celsus says"—"Galen says." My own heretical view is that he did much more harm than good to the Art of Medicine by his generalizations based as they were upon inadequate observations and leading to the comparative neglect of close clinical watchfulness—it was not at the bedside but in the book that the course of a disease was to be learned.

However that may be, not the professional man alone but every intelligent reader will find in the works of "The

Father of Medicine" much of interest, not to say of amusement. How many obstetricians, for example, know what we are taught in the *Aphorisms*, Lib. V, 37, 38, that if either bosom of a pregnant woman unexpectedly becomes small, an abortion will follow—if she is pregnant with twins, one or the other; and if the right bosom is affected, a male foetus will be miscarried; if the left bosom, a female?

I was rather astonished to find so little about the teeth in the *Aphorisms*, for teeth were early a subject of careful attention by medical practitioners. It will be remembered that it was a Greek who insisted on tooth-extracting instruments being made of lead, because no tooth should be pulled which could resist and break the frangible lead.

The first reference to teeth is in Lib. III, 25:

"Children teething, it may be expected, will be attacked by pruritis of the gums, fevers, convulsions, diarrhoea, and especi-

ally when they are producing the canine teeth and those among the children who are very fat and those who are constipated."

The next is in the prognosis in Fevers, Lib. IV, 53:

"When to those suffering with fever, a viscous coating grows on their teeth, in them the fever will exacerbate."

Dealing with heat and cold, Hippocrates says—Lib. V, 18: "Cold is injurious to the bones, teeth, nerves, brain and spinal cord; Heat is beneficial to them."

These are the only references to teeth in all the eight books (the eighth is perhaps not the work of Hippocrates) unless, as is probable, the following is to be so construed: Speaking of the incidence of diseases, Lib. III, 21:

"In summer are to be looked for fevers . . . vomiting, diarrhoea, ophthalmia, ear-aches, exulcerations of the mouth . . ."

*Hotel Samoset, Rockland, Maine,
July 30, 1935.*

EMPIRE DENTAL MEETING

Preliminary arrangements are well in hand for the Empire Dental Meeting in London, July 24-27, 1936. It is hoped that the multiplicity of attractions will appeal to many Canadian dentists, and that a large representation from this country will join the party next summer.

CONVENTIONS

GREATER NEW YORK DECEMBER MEETING, NEW YORK CITY, DECEMBER 2-6.

CHICAGO DENTAL SOCIETY MIDWINTER CLINIC, FEBRUARY 17-20.

INTERNATIONAL DENTAL CONGRESS, VIENNA, AUGUST 2-9, 1936.

STUDIES ON FOCAL INFECTION, ELECTIVE LOCALIZATION AND CATAPHORETIC VELOCITY OF STREPTOCOCCI

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A FAIR idea of the incidence of infection associated with various systemic diseases among patients as they present themselves at the Mayo Clinic, as elsewhere, may be obtained from a study of Table 1.

The streptococcus was commonly isolated from symptomless, roentgenographically positive or negative pulpless teeth, root tips, residual areas of infection in the jaw, partially erupted and impacted teeth and from accumulations of pus beneath deciduous teeth which had not been discovered or considered previously or which were thought to be harmless, as well as from other sources.

These statistics reveal that from 80 to 90 per cent. of adults harbour teeth with filled root canals, and that an average of 69.5 per cent. of these pulpless teeth show roentgenographic evidence of periapical rarefaction due to infection.

By making cultures chiefly in dextrose-brain broth and soft dextrose-brain agar, media affording a gradation of oxygen tension, and aerobic cultures on blood agar plates, I found that practically all pulpless teeth of persons suffering from various systemic disorders were infected with streptococci. This was true whether the teeth were roentgenographically positive or negative. Cultures made from vital teeth free from caries, fillings and pyorrhoea, in similar groups of patients,

on the other hand, were almost uniformly sterile. These conditions indicate that with the removal of the pulp the apex of the root and the periapical tissues constitute a *locus minoris resistentiae* and become more easily infected. The problem is one of keeping pulp canals free from infection for years. Sealing antiseptics in the canal and filling it with various impervious materials does not suffice, for I have isolated streptococci from apices of teeth so treated long before, and with the freshly isolated strains have reproduced the disease from which the patient was suffering.

The harmful effect of pulpless teeth or other foci of infection is indicated by the fact also, that blood cultures in apparently well persons were positive in persons who had chronic focal infection twice-as often as in persons who had no demonstrable focus of infection.

ELECTIVE LOCALIZATION FOLLOWING INTRAVENOUS INJECTION

The streptococcus commonly and other bacteria rarely, following intravenous and other inoculations of animals, tended to localize electively in the tissues or organs affected in the patient. The results as summarized in Table II, following intravenous injection of the streptococci isolated in different diseases, indicate the degree of organotropism, and the absence

Studies on Focal Infection

TABLE 1
Percentage Incidence of Associated Infections.

Diseases	Cases	Sex		Tonsillitis	Influenza		Foci of infection in:						
		Male	Female		Remote	Immediate	Tonsils or tags of tonsil	Teeth (pyorrhea)	Sinuses	Prostate gland or seminal vesicles	Cervix	Pulpless Teeth	
												Cases	Positive
Encephalitis.....	205	148	57	46	37	32	70	56	2	16	2	102	87
Spasmodic torticollis.....	32	23	9	53	41	6	60	75	3	57	11	17	76
Multiple and combined sclerosis.....	27	19	8	33	41	15	78	67	0	37	0	19	89
Chronic poliomyelitis.....	17	12	5	47	30	18	65	71	0	25	0	13	92
Neuritis and myositis.....	17	10	7	71	35	24	41	71	24	80	57	12	42
Gastroduodenal ulcer.....	27	25	2	33	37	0	74	74	0	72	100	21	52
Lesions of eye.....	19	9	10	58	42	5	53	53	0	100	60	10	50
Lesions of skin.....	23	18	5	35	26	9	74	56	9	72	0	13	77
Prostatitis.....	24	24	0	42	54	0	63	54	4	100	0	13	69
Arthritis.....	109	67	43	63	40	3	51	69	6	94	53	74	61

of this faculty in streptococci isolated from well persons or from persons ill from causes other than streptococci.

It will be seen that the incidence of lesions in the various organs is stated in percentages which are thus directly comparable.

When streptococci were isolated from the pulps or apices of teeth extracted during active symptoms of pulpitis, localization in pulps of teeth, in addition to other tissues or organs affected in the patient, occurred following intravenous injection of animals.

Elective localization, almost invariably by streptococci, occurred in the following diseases: chronic infectious arthritis and myositis, rheumatic fever, ulcer of the stomach, appendicitis, cholecystitis, nephritis, neuritis, herpes zoster, neuralgia, erythema nodosum, endocarditis, and myocarditis.

Hemorrhagic infiltration of the posterior roots (Figs. 1 and 2) with localization of the streptococcus usually with-

out herpes or other lesions, occurred in a high percentage of rabbits injected intravenously with the streptococci isolated from various foci of infection in a series of cases of intercostal neuralgia, some following, others independent of, attacks of herpes zoster. Marked benefit followed the removal in which the streptococcus having elective localizing power was demonstrated.

A staphylococcus from an infected maxillary sinus and from the tonsils of a patient suffering from severe nephritis, which localized electively in the kidneys of rabbits on intravenous injection, produced nephritis when inoculated into devitalized teeth of dogs. Moreover, characteristic symptoms and changes due to elective localization of streptococci inoculated into the teeth of dogs have been reproduced by Rosenow and Meisser in cases of nephrolithiasis (Fig. 3), by Meisser in cases of ulcer of the stomach, and by Rosenow in cases of chorea and epidemic hiccup. Likewise, Cook pro-

TABLE II
Elective Localization of Streptococci Isolated in Various Diseases.

Diseases	Strains	Animals given injections	Animals with lesions in various structures, per cent													
			Appendix	Stomach, duodenum, or both	Gallbladder	Joints	Muscles	Nerves	Kidneys	Skin	Endocardium	Myocardium	Eyes	Lungs	Intestines	Liver
Appendicitis	85	222	60	13	1	22.7	7.7	0	2.7	0	19	5.4	1	0	2.7	0
Gastroduodenal ulcer	354	1539	2	55	6.6	8.8	1.9	0.6	4.5	0.6	5	1.4	0.6	0.6	2.7	0.6
Cholecystitis	56	177	0	32	45	9.6	5.6	0	6.8	1.7	6.8	5	0	4.5	12.4	0
Chronic ulcerative colitis	206	527	0	0.8	0.6	1.3	0.4	0	0.8	0	1.3	0	0	0	58*	0
Rheumatic fever	24	71	8.5	41	28	66	26.8	0	39.4	5.6	46.5	43.7	9.9	4	12.7	0
Erythema nodosum	9	53	0	3.8	0	18.9	32	0	7.6	60.4	9.4	0	1.9	1.9	1.9	0
Chronic arthritis	723	1447	0.6	7.9	2	52.8	11.9	0.4	8.3	0.4	5.5	0.7	0.4	2.3	0.5	0.2
Myositis	192	891	0.5	13.7	2.2	29.3	72	8.7	9.2	3.4	10.3	14.5	1.0	6.2	0.7	0.1
Neuritis	24	124	3	5	1.6	12	32	65	9.7	0	4.9	9.7	0	13.7	3	0
Nephritis	17	64	0	4.7	1.6	9.4	11	0	59.4	0	3	4.7	0	0	0	0
Pyelonephritis	50	168	0.6	6.5	1.8	11.9	9.5	0.6	7.3	0	4.8	4	0	0	3	0.6
Herpes Zoster	29	115	5	21	9.6	13	14.8	0	4.4	60	3.5	3.5	9.6	15.7	13	0
Endocarditis	29	109	0	6.4	1.8	17.4	2.8	0	11.9	0.9	76	9	0	11	7.4	0
Iridocyclitis	87	272	0.4	2.2	0.8	5.2	3.3	1	2.6	0.8	2.9	0	41.6	2.6	0.4	0
Controls	534	1329	2.3	14.2	4.5	18.4	13.5	2.9	8.7	2.8	10.6	6.4	0.8	8	5.2	1.2

* Colon

duced ulcerative colitis caused by elective localization of the diplostreptococcus of Bergen in cases of ulcerative colitis by inducing with it chronic foci of infection in the teeth of dogs. The conditions around the teeth in the dogs were similar to those following extirpation of the pulp of teeth by dentists in man. The infected teeth became discolored, but remained firmly in place in the alveolar sockets; the infection caused rarefaction and resorption of bone in the periapical region (Fig. 4), without swelling pain or tenderness and the cellular infiltration and distribution of the diplococci in the granulomas that had formed were also similar. The streptococci isolated from

the teeth, often months after inoculation, usually had retained elective localizing power as measured on intravenous injection into rabbits.

STUDIES IN CATAPHORESIS

In order to obviate the use of animals and to determine, if possible, more precisely wherein lie the reasons for elective localization, Jensen and I have studied cataphoretically streptococci that have elective localizing power, and Pratt, Sheard and I have studied the effects of exposure to the high-frequency field of streptococci having elective localizing power and characteristic cataphoretic time and velocity. Among other interesting

Studies on Focal Infection

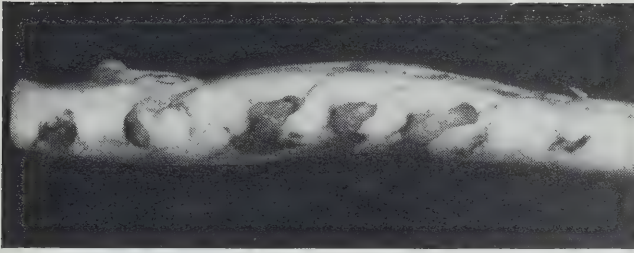


FIGURE 1

Localized hemorrhages surrounding posterior sensory roots in a rabbit that received an intravenous injection of the streptococcus from an infected tooth of a patient with intercostal neuralgia.

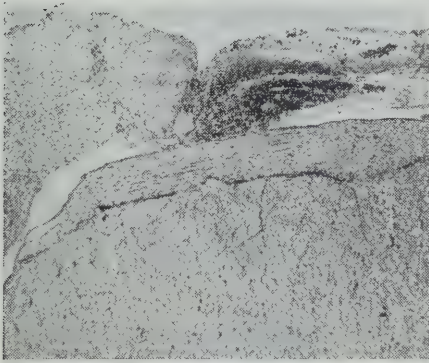


FIGURE 2

Hemorrhage and leukocytic infiltration in posterior sensory root of the rabbit referred to in Fig. 1. The absence of lesions in the ganglion, dura and cord may be noted (hematoxylin and eosin; X 50)

facts it has been discovered that there is a close parallelism between elective localization and cataphoretic time and velocity of streptococci. The details of the technique are described in published reports. It is sufficient to state here that the migration rate, under constant voltage in an electrical field, of the different streptococci is determined by direct observation in the cataphoretic cell of the Northrop-Kunitz-Mudd apparatus.

In Fig. 5 may be noted the distribution curves of cataphoretic time and velocity of streptococci isolated from infected teeth of well persons and from patients with diseases of the nervous system.

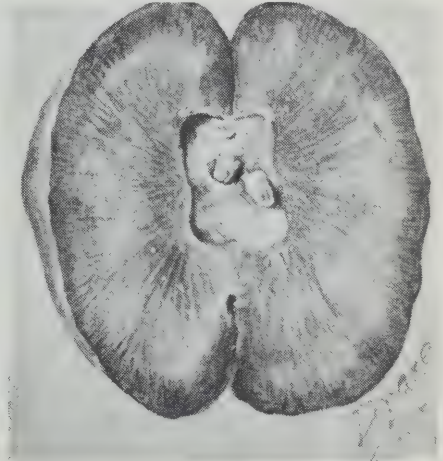


FIGURE 3

Large and small stones in the kidney of a dog, the teeth of which had been infected four months previously with the streptococcus from the urine of a patient with recurring nephrolithiasis.

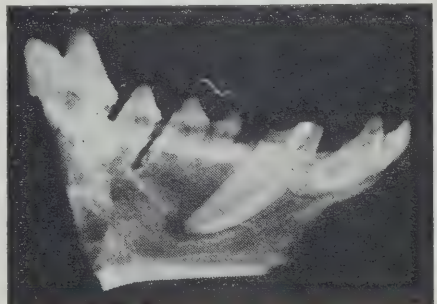
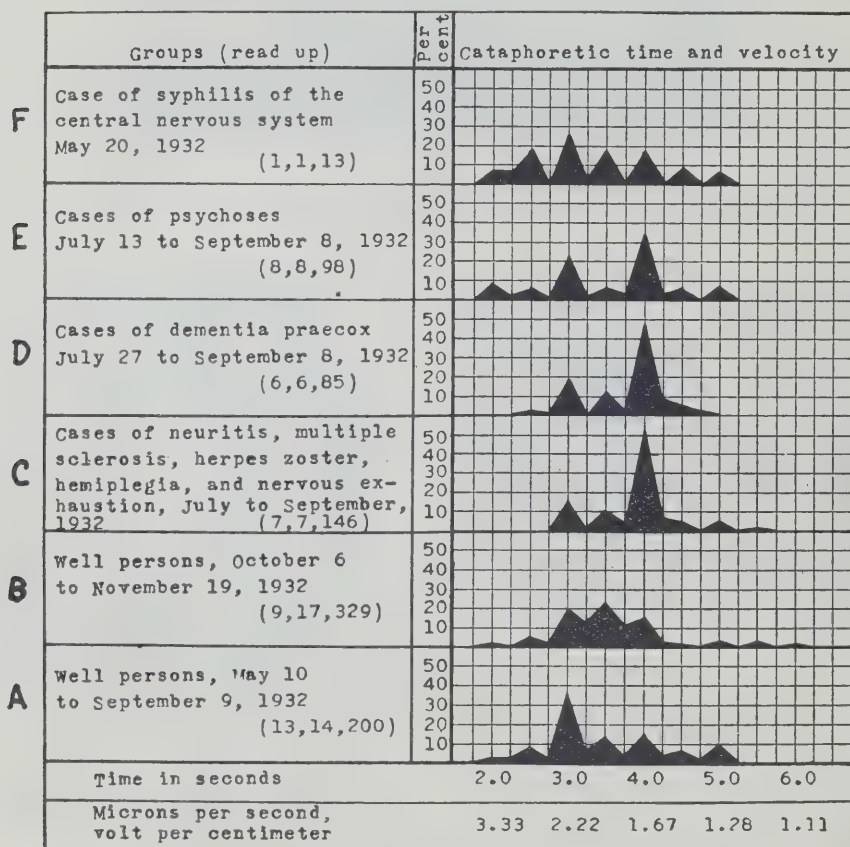


FIGURE 4

Rarefaction of bone surrounding the apex of one of the infected teeth of the dog referred to in Figure 3 (X1 1/2).

Figure 5.

Cataphoretic time and velocity of streptococci isolated from infected teeth of well persons and persons suffering from diseases of the nervous system.



I can now often predict before injection of a given culture whether localization will be specific or not by determining the distribution curve of cataphoretic time and velocity of the streptococci. This has made clear an otherwise puzzling fact, often observed in elective localization work, of sudden disappearance of elective or all localizing power, or the appearance of new affinities following successive animal passage and repeated transfers in cultures.

GENERAL COMMENT

Generally speaking, the sooner foci are eliminated, after the onset of a disease, preferably even before systemic symptoms have occurred, the better should be the immediate and end results. The still far too common practice of waiting until the disease is far advanced or until a serious condition, such as a hemorrhage in ulcer or a heart attack in heart disease, has developed, or until advanced age before

evident foci, especially pulpless teeth, are removed, is deplorable.

The roots of teeth from which the pulps have been removed and their periapical tissues become more susceptible to infection than those of vital teeth. The majority of pulpless teeth, irrespective of roentgenographic findings, are infected and hence potential foci of infection.

Devitalization of teeth and the filling of root canals, as formerly practised through many years, should cease. Fortunately, this procedure, always difficult and expensive and often uncertain, is now far less often undertaken than formerly. Many who formerly skilfully practised the art find it no longer necessary, and consider it safer to remove pulpless teeth and to attach restorations in a way harmless to vital teeth. It is to be hoped that efficient methods may be found that will not only sterilize pulpless teeth and periapical tissues that have become infected, but will also prevent subsequent infection, especially of the periapical tissues. The fulfilment of the latter requirement seems almost unattainable, and, until this has been accomplished, it would seem wiser to remove teeth that have become infected or that require extirpation of the pulp than to retain them at the risk of having them become the source of an insidious, incapacitating and perhaps fatal infection. Vital teeth free from pyorrhoea and fillings should never be extracted except as it becomes necessary for restorative work, but the extraction of pulpless teeth seems to me to be indicated, quite regardless of the appearance of the roentgenograms. It seems to me, also, that tonsils of all patients who have serious systemic disease presumed to be of focal origin should be removed, regardless of whether they are large or small or whether

they are visibly infected or not, even in the absence of a history of recurring attacks, unless this is contraindicated for various reasons, and provided no other focus can be found.

Symptomless, residual areas of infection in the jaws, even in edentulous jaws, often difficult of demonstration and often unsuspected foci of infection, have yielded the streptococcus with great regularity, and should be eliminated more often. Elective localization of streptococci isolated from pyorrhoea pockets occurred commonly following intravenous injection, thus emphasizing the importance of periodontoclasia as a focus of infection, and steps to correct this most common of evils should be taken.

Teeth, especially multirooted teeth, with deep fillings or caries, which manifest evidence of infection of the pulp, with or without pulp stones, and even symptomless teeth which react positively to vitality tests and that have deep fillings, may be the source of systemic effects and may need to be removed. However, this should be done only after due consideration has been given to other sources of infection. I have repeatedly seen marked benefit follow the removal of such teeth when all other efforts had failed, especially teeth in which pulps had died and were found heavily infected. Direct injection of the material containing the bacteria in such teeth often was followed by extremely specific effects.

In general, it is far better to remove infected teeth, even at the expense, if need be, of a diminished grinding surface, than to preserve them if symptoms of a disease due to foci of infection are present. I have never seen a case in which untoward gastro-intestinal symptoms were due to a lack of biting surface,

provided there were no root tips or residual or other areas of infection in the jaws. On the other hand, many instances have been noted in which there occurred improvement in general health and disappearance of symptoms in patients having different diseases while "gumming" their food during the interval between removal of infected teeth and the placement of artificial dentures.

The importance of high resistance that comes from proper living and good inheritance as factors in preventing infective diseases from any source is granted. But why jeopardize or break down these

barriers of Nature through foci of infection, provided the latter can be prevented or eliminated?

The almost constant presence of streptococci in foci, their specific localizing power following various methods of inoculation, their characteristic cataphoretic time and velocity, their presence in the spontaneous and experimentally produced systemic lesions and the specific action of the serums of patients, all indicate that the respective streptococci have causal relationship in the diseases studied.

PROFESSIONAL STATUS ESTABLISHED

AT the last Session of the Quebec Legislature the City of Montreal was given authority—for special revenue purposes—to levy a tax of 2% on all sales of merchandise (with few exceptions) of a value in excess of ten cents within the limits of the Municipalities under the control of the Metropolitan Commission. Every firm or individual affected by this Sales Tax By-law No. 1336 was required to register with the City as a collector of the tax, exact the tax from the person to whom the sale might be made (the vendor not being allowed to absorb the tax) and remit the same monthly along with a sworn statement to the Collector of Taxation at the City Hall.

The Board of the College of Dental Surgeons felt that as professional men

this By-law did not apply to them and advised the authorities to this effect. We also suggested to our confrères that they take no notice of the By-law until the Board was satisfied that they were liable for the tax. After numerous interviews with the City Financial Department we were finally given a ruling which virtually classed the members of the dental profession—for the purposes of this Sales Tax By-law—as retail sales merchants. The City insisted that a 2% tax be collected from each of our patients on the cost of all materials used in the treatment of each individual case. Naturally we opposed this ruling and in order to clarify the situation the City was invited to take an action against one of our confrères, as a test case.

In August Dr. Denis Forest, Registrar

of the College, was summoned to appear before Judge Leblanc of the Recorder's Court for failing to comply with the City's Sales Tax By-law.

Dr. Forest's contention was that as a professional man he was giving his patients a health service in the same way as a physician or surgeon and that as such our Quebec Dental Law gave him the same privileges and exemptions as those of the medical profession — that the restorations he was required to make in the practice of his profession were nothing more nor less than the application of a prescription required in the treatment of each case he handled, whether it be the replacing of a lost or broken tooth or the correction of any pathological condition which might necessitate the use of various materials or drugs in the course of the treatment, —that no distinction should be made between the dentist and the physician or surgeon so far as the application of this Sales Tax By-law was concerned,—that the cost of the materials and drugs which he used in his professional duties was altogether out of proportion to the fees charged for the services and that in any case if he were legally subject to any tax whatsoever it should be collected from him on the materials, etc., and by the merchants from whom he purchased his office requirements.

While the total individual tax—so far

as we as dentists might be concerned—would not have reached any considerable amount in the majority of instances, the Board felt that a *Principle* was at stake and that we had every reason to oppose the City's ruling in this matter.

The judgment handed down by the Court ought to be a source of gratification to those of us who feel that our professional status has been definitely established and that we have been legally recognized on the same basis as other professional bodies. Judge Leblanc's decision follows:—

"Surgeon dentists, under chapters 209 and 216 of the Revised Statutes of Quebec, are professionals who rent their services for which they have a right to charge fees, and while, in the exercise of their profession, they are sometimes obliged to furnish their clients artificial substitutes which they have manufactured themselves, this to replace a lost or dead organ, it seems to this court that in such a service there is no element of sale as provided for by the aforementioned statute and by-law, and in consequence court concludes that the complaint must be dismissed."

G. GUELPH ARMITAGE,
President,

*College of Dental Surgeons,
Province of Quebec.*

Medical Arts Building, Montreal.

Patients who require a complete medical examination should have a complete dental examination as well.—A. E. WEBSTER.

DENTISTRY FOR THE INDIGENT

by W. W. WRIGHT, D.D.S., Winnipeg, Manitoba.*

THE economic crisis of the last six years has brought forth new problems in every field of endeavour. This is particularly true of the health services for these are of prime importance, being next to food and shelter. Being a health service, and Canada a young country where never before has want existed in such proportions as to-day, dentistry has faced a new problem which has become more and more acute as time has passed.

Many of us have been hopeful that conditions would be better by now, that good times would be again with us and that our problems would take care of themselves automatically. But more and more, it is becoming apparent to thinking people that the permanent care of quite a number of indigent people will have to be provided and we, as dentists, must give close study to our part of the problem.

What is the best way to provide adequate dental services for those unable to pay? There will be at least three viewpoints—those of the patients, the dentists, and the state or the authorities who pay for these services. In order that a fair basis be arrived at it is absolutely necessary that each of these parties understands the viewpoint of the others. At this time, I am concerned in the methods and means, we, as dentists, can take to place our ideas before the public and those in authority.

I know from considerable correspondence and magazine articles that

dental societies in other provinces have been having similar difficulties to those in Manitoba. I have referred already in print to some of our difficulties and successes in Manitoba—(Oral Health—June, 1935). I wish to point out further however one source of public information not usually capitalized by us and which will surprise any dental society as well as the authorities or the public.

We claimed in our discussions with Winnipeg that we (dentists) were doing a great deal of charitable dentistry in and for public institutions in addition to ordinary charitable work in our offices and that we were thus saving the city thousands of dollars, which quite properly was their affair. I was asked to tabulate this work and the information obtained was a surprise to ourselves as well as the city. I have no doubt that it played an important part in the city eventually placing the services for those on relief in the hands of the Manitoba Dental Association and relieved a rather tense situation between the Association and the city. The table is printed herewith for any help it may be to others.

Our committee was charged also with preparing a memoranda to the Canadian Dental Association with reference to the proposed National Health Insurance scheme. Some of the items included were drafted from the report of the Canadian Dental Association committee on State Dentistry. The memoranda in the form of a resolution was passed unanimously

*Dr. Wright is past-president of the Manitoba Dental Association; Lt.-Col. Canadian Army Dental Corps and chairman of the Public Dental Health Committee of the Manitoba Dental Association.—EDITOR.

at the annual meeting of the Manitoba Dental Association in June, 1935. The resolution reads as follows:—

The Manitoba Dental Association recommends to the Canadian Dental Association that it is in favour of the following essentials in any system of National Health Insurance. It agrees that it is not desirable to advocate nor oppose any such system at this time but since apparently some such system is about to be inaugurated that it should co-operate to the fullest extent. It recommends:—

1. That dentistry be made a statutory benefit and that dentistry shall not be classed as an auxiliary benefit.

2. That all licensed dentists in good standing be eligible to participate in the plan and that any dentist, who so desires, be permitted to refuse to take patients.

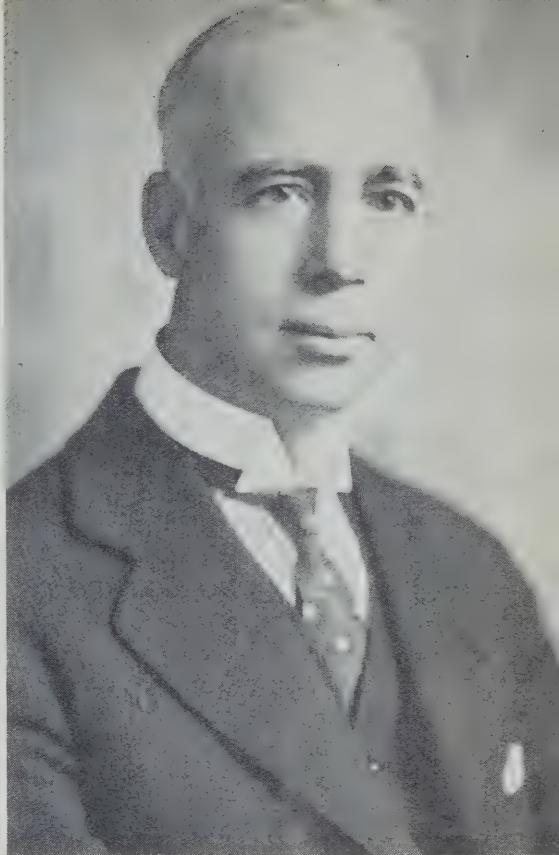
3. That patients be given freedom of choice in the selection of a dentist.

4. That no third party be permitted to come between the patient and the dentist in a professional sense. (In some countries the dental benefit is arranged on a reference basis, the person first going to the family physician and securing a dental letter.)

5. That remuneration shall be on a fee-per-operation basis and shall be adequate to ensure a fair return to the dentist.

6. That services shall include diagnosis, prophylaxis, and other preventive treatment and a minimum of restorative procedures as shall be required to place the patient's mouth in a healthy condition and insure reasonable efficiency in mastication.

7. That the administration shall be in charge of a Health Insurance Board



on which dentistry shall be equitably represented.

8. That dentistry shall be properly safeguarded in whatever plans of supervision are devised and represented on all Boards appointed to settle differences between the assured and members of the profession.

9. That in the shaping of the original plan, its execution and in all changes made to it, dentistry be considered a separate and co-operating unit with rights similar to those of any other contributing profession.

10. That decisions regarding purely professional questions be left to the dental committee for final decisions, e.g., professional ability.

11. That the government shall decide what classes shall be eligible for medical and dental services.

VOLUNTARY INSTITUTIONAL DENTAL SERVICES - WINNIPEG COMPILED OCTOBER - NOVEMBER 1934		GRACE HOSPITAL - SALVATION ARMY	VICTORIAN ORDER NURSES	WINNIPEG GENERAL HOSPITAL	KING GEORGE & KING EDWARD HOSPITALS	SHRINER'S HOSPITAL FOR CRIPPLED CHILDREN	ST. BONIFACE SANATORIUM	ST. BONIFACE HOSPITAL	MISERICORDIA HOSPITAL	ST. JOSEPH'S HOSPITAL	ST. JOSEPH'S ORPHANAGE	SIR HUGH JOHN MACDONALD HOSTEL	MANITOBA SCHOOL FOR THE DEAF	THE KNOWLES SCHOOL FOR BOYS	CHILDREN'S AID SOCIETY OF WINNIPEG	CHILDREN'S HOSPITAL OF WINNIPEG	MOUNT CARMEL CLINIC	CANADIAN FOUNDATION FOR PREVENTIVE DENTISTRY	TOTALS
		1	2	3	4&5	6	7	8	9	10	11	12	13	14	15	16	17	18	total
1	Patients treated in 1933.	40	250	250	83	144		10 daily			65		60	150	200	1512	880	1303	8634
2	Patients treated in 1934 to date.		letter	250	59	73		10 daily			42	4	45	150		990	495		
3	Does 1933-34 re- present an average year?	letter	See letter	yes	yes	yes		less			yes		less	yes	letter	yes	yes		yes
4	No. extractions in 1933		432	See letter	1932 70	10		?			175		85		read letter	205	2000	1988	over 5000
5	Any other operations?	See		See letter	196	Yes F & T		no			some fillings		T&F	yes	yes	yes T&F	no	yes	yes
6	No. dentists on staff or otherwise	1	40	2	1	1	1	1	0	1	1	0	1	1	12	4	22	7	half city no
7	Hours spent monthly in institution.			25	6	8		50		?	none	0	0	letter	0	0	50	16-18	
8	Per cent that go down town		100% yes	0	4%	0				0	most	all	all	all	all	0	0		
9	Could all patients go down town?	no	yes	no	no	no	no			no	most	yes	yes	yes	yes	yes	yes	no	SPECIAL REPORT
10	Services of Assistant?		yes	yes	yes	yes	yes	yes	no	yes	yes	no	no	yes	yes	yes	yes		
11	Is Dentist paid?	no	no	no	\$36. month	no	yes Privately			no	no	no	no	part	no	no	no	part	
12	Could your institution pay?	no	no	no	yes	no	no	yes		no	no	no	no	no	by extra taxes	no	no		
Note: T & F = Treatments and fillings																			

12. That appointment of dentists to advisory or administrative positions in connection with this act, shall be made only on recommendation of the legal provincial dental organization.

It is my firm belief that if dentistry is going to receive its due share of responsibility in any health scheme that we

must let the public and the authorities know by the press, radio, or other means that we have been rendering a very valuable voluntary service in the past and are best fitted to advise, organize and carry out any municipal or state scheme in the future.

908 Boyd Building.

THE FORUM

LET'S HAVE A FOUNDATION !

WE propose a Foundation with a capital of many millions of dollars. We believe that there should not be the slightest difficulty in raising this money. The majority report of the Committee on the Costs of Medical Care indicates that we have sufficient incomes to readily contribute the paltry sum.

We demand a study of two grave problems confronting the insufficient income class. These are, respectively, exposure and under-nutrition. Either of the above has caused far more illness and death than lack of proper medical care.

There can be no question that the best clothing and the highest quality of food cost too much. A survey should be made; a committee of Doctors of Philosophy must be named at once. A federal grant of a vast sum of money may be readily secured for this investigation. When this sum is exhausted the Doctors of Philosophy will report that good food and good clothes are expensive.

Our Foundation will then insist that certain security legislation be introduced in Congress and in the legislatures of the various states. Compulsory clothing and food insurance laws will be enacted.

The Rosenwalds and the Filenes will be compelled to discontinue the manufacture or sale of good clothing. Mr. Milbank will have to supply a cheaper and poorer grade of milk. Since we have some who cannot afford good clothing and good food there is only one recourse,—i.e., compel everyone of that

particular income-class to purchase, through insurance, the cheaper grade provided.

To insure the proper administration of this benevolent legislation, we must have a large group of salaried directors. For lack of a better name we shall call them the Well-fed Workers. The latter are carefully chosen elderly maiden ladies of both sexes who, in the interest of fairness, must have not the slightest knowledge of either the food or clothing business.

Statistics of foreign countries, where the system has been in vogue since it has been in vogue, go to show that Mr. Filene may earn up to \$2,000.00 per annum, if he has enough clothing buyers on his panel. Mr. Milbank may possibly earn the same, if enough Eagle Brand is elected by the insured on his list.

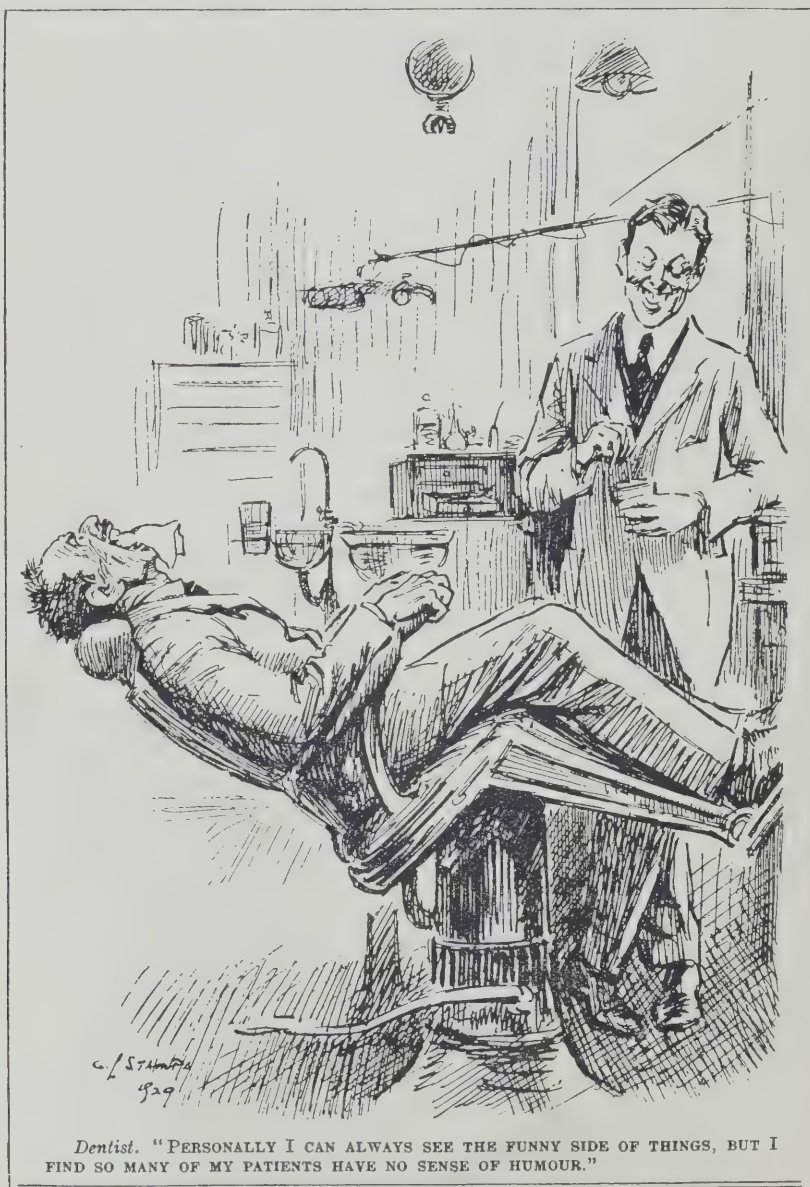
Having thus taken care of the insufficient-income class, the Well-fed Workers will next establish in all cities and towns certain little depots for supplying these necessities to the real indigents. We shall call these depots "free clinics". They shall be under the direction of other salaried Well-fed Workers. The work and material will be donated by the food and clothing people.

Mail checks forthwith to the Physicians' Funny Foundation, Ink.; just ink, that's all!—*Editorial in the Medical Reporter of the Oregon State Medical Society, April, 1935.*

FEAR AT THE DENTIST'S

LIKE all men I am a coward at the dentist's; but when he is going to hurt me he tells me so. Consequently, when he makes what appear to be most fearsome preparations and assures me it

will not be painful I trust him, and three-quarters of the terror, that of anticipation, is defeated.—Ex-patient.—*Extract from the "New Statesman and Nation", per Dental Magazine and Oral Topics.*



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PRINCE EDWARD ISLAND



W. T. Waye, Charlottetown

NOVA SCOTIA



A. W. Faulkner, Halifax

NEW BRUNSWICK



J. F. Edgecombe, Saint John

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

MANITOBA



J. F. Morrison, Winnipeg

SASKATCHEWAN



F. C. Harwood, Moose Jaw

ALBERTA



John Clay, Calgary

BRITISH COLUMBIA



J. S. Bricker, Vancouver

DENTAL EDUCATION

In 1930 the American Association of Dental Schools appointed a Curriculum Survey Committee, charged with the responsibility of outlining a plan of dental education whereby the profession might take its rightful place in the promotion of human welfare.

The work, which was supported by grants from the Carnegie Corporation, has been completed and the report has been published in a volume of four hundred and twenty-five pages, entitled "A Course of Study in Dentistry".

The survey was in charge of a committee of deans of various dental schools, the chairman being Dr. Wallace Secombe, the distinguished dean of the Dental Department of the University of Toronto. The committee selected, as its educational advisers, two well-known educationists, and Lloyd E. Blauch, Ph.D., of Chicago, was made executive secretary, devoting his entire time to the survey.

The plan followed consisted of three steps. The *first step* was to obtain a comprehensive view of the needs and requirements for oral health service. The *second step* was to determine and outline the subject matter and experience that should be included in the various courses of the dental curriculum. The *third step* was to arrange the courses in a suggested curriculum, to outline

the requirements for admission to the dental schools, and to make appropriate recommendations to the American Association of Dental Schools.

The sub-committee reports were discussed by the Association and a series of recommendations adopted, and the final report was prepared by the Executive Secretary.

Oral Health conditions were studied from a questionnaire sent to a large number of leaders in the United States and Canada. These findings should prove valuable to the dentist who contemplates writing on this subject or delivering any public address on health problems.

Forty pages are devoted to dentistry and its responsibilities. These are discussed under the headings,—Specialization, Health Aspects, Prevention, Dentistry for Children, Education of the Public, Radiography, Diagnosis and Treatment Planning, Treatment of Malocclusion, Restorative Dentistry, Oral Medicine, Anaesthesia, Oral Surgery, Medico-dental Relationships, Social and Economic Relations, Dentistry and Public Health, and Practice Management.

In such a survey we expect to find as a matter of course, outlines of study in such subjects as Operative Dentistry, Oral Surgery, Prosthesis, Orthodontics, Pathology, Chemistry, etc., but here we are glad to see other suggested studies not heretofore stressed in the dental curriculum, such as Orientation in Dentistry. Such a course enables the student to obtain a general understanding of dentistry as a health profession, its responsibilities, various phases of dental education, their purposes and correlation, and informs him how to study dentistry most effectively and economically. How grateful some of us would be had we received such a training early in our professional career!

One of the most important subjects stressed by the survey is that of Diagnosis and Treatment Planning. Because of the weakness of the instruction in this subject in many schools, we frequently find the recent graduate, who may be well-versed in the mechanics of restorative science, facing failure because he is not trained in the best method as to how to receive a nervous patient and allay apprehension, or is not prepared to make a complete examination, to analyze and interpret the data collected, and to outline to the patient in a clear and convincing manner a general plan, or perhaps several plans of treatment.

We are gratified to note that the Committee accepts the basic principle: *that dental education be further developed as an autonomous field of professional education.* It is agreed, however, that the dentist should have a thorough understanding of the principles of medicine, in order that he may co-operate intelligently with physicians and health workers, thus practising dentistry as a health service. In the chapter dealing with recommendations, we observe that the two-four plan of education is favoured; which is that two years of education in the liberal arts and sciences be required for admission to the dental school, and that the undergraduate dental curriculum be a four-year course during which some thirty-five subjects are taught. It has been wisely pointed out that the student should be allowed a reasonable amount of

time for reading and independent study. It might also have been added that during his college course, the student should have a greater opportunity of hearing what the successful dentist, outside of college walls, has to say about some of these dental problems. Surely the student will have a broader outlook, if he hears the views of the average successful practising dentist, even though those views may be at variance with some of the principles agreed upon as orthodox by the college staff. In the writer's opinion, this has been one of the weaknesses of dental professional training in almost protecting the student from hearing views, often of the most practical nature, other than those formulated by the college staff.

There is one other short chapter in this volume, in the form of an appendix containing the views of laymen regarding dentistry and dentists which is more than worth the price of the book itself. A limited canvass of leading laymen was made recently throughout the country regarding dentistry, and their views were tabulated. Obviously, we should know the layman's conception of dental service in order to correct his impressions if they are wrong, and to improve our own methods if they are in error.

It was found that only forty-nine per cent. of these laymen visited the dentist twice a year or less, twenty-two per cent., once a year, and twenty-nine per cent., only as special need arose. In this respect we can do much to improve the layman's conception of dental service.

On the other hand, it is interesting to note the emphasis placed by these laymen upon thorough examination of the teeth and jaws, prophylaxis, the use of the x-ray, proper instruction, particularly to children, and the need of co-operation among dentists. The layman expects the dentist to be careful, to be accurate, and to use sterilized operating instruments. He should also be clean in his personal habits, honest, trustworthy, refined, and should refrain from the use of alcohol or tobacco during office hours. The dentist is also expected to be up-to-date, to have a membership in professional organizations, to show a good example by looking after his own teeth, to be punctual, to be active in community enterprises, and to have broad intellectual interests. In these things, we can go far in improving our own methods of practice and living. The tabulation shows an interesting discrimination. A very high estimate is placed upon good dental service, cleanliness, and honesty.

The questionnaires requested opinions, as the layman has observed it, regarding the general quality of the service rendered by the dental profession as a whole. The replies were as follows: (a) reasonably good, fifty-six per cent.; (b) very satisfactory, forty-one per cent.; (c) below satisfactory, twenty-seven per cent.

Perhaps it is time that we stood aside for a while and watched ourselves go by, or, as Mr. Selfridge, head of the great Selfridge Store in London, says: "Take time out to think." He states further, "The very fact that modern life is faster, makes it all the more necessary that business managers should set apart some period of the working day for meditation, for clear thinking. The

higher the speed of the car, the greater the need for accuracy in the steering. One should resolutely set a definite and regular hour aside for this purpose, not at the fag end of the day, or at lunch time, but at some time during the day when the imagination, the judgment, the memory and the ambition are awake and on their mettle." If this is necessary in the successful managing of a great commercial establishment, could it not be very advantageous to the dentist, and particularly the busy one. The sooner we realize that there is a place for meditation and clear thinking in our daily walk, the better for us and the better for dentistry. We commend this book, "A Course of Study in Dentistry", to our readers. The prices are: paper-bound, \$1.00; cloth-bound, \$1.50. Copies can be had from Dr. G. D. Timmons, secretary-treasurer, American Association of Dental Schools, 1121 West Michigan Street, Indianapolis, Indiana, U. S. A.

*"Life is an arrow—therefore you must know
What mark to aim at, how to use the bow—
Then draw it to the head and let it go."*

OUR NEW SECTION

Many dentists have problems in daily practice that are baffling, and they would value very much the opinion of the specialists in these particular fields.

The Canadian Dental Association is now prepared to offer this service to the profession of Canada. We invite you to forward your problems to the editorial department of the Journal, Winnipeg. These questions will then be submitted to at least three prominent practitioners, for their opinions. The answers will be forwarded to you or published in the Journal as space will permit.

While we are not in a position to offer a reward for the best name for such a section for the Journal, we would greatly appreciate receiving suggestions from the profession.

BOOK REVIEW

Clinics in Restorative Dentistry; by Elmer S. Best, D.D.S., editor of Dental Survey. Paper cover. Fifty pages. Price \$1.00. Published by the Dental Library, Bureau of Engraving, Inc., Minneapolis, Minnesota.

This book is undoubtedly an innovation in dental textbooks. Printed on good paper, the profusion of illustrations is particularly clear and interesting. The main attempt in this new venture has been to provide the maximum of material with the minimum of reading time. This has been successfully accomplished through the abundant use of illustrations with adequate legends. To those who wish to see at a glance what type of restorative work is recommended for a specific case, without having to read some lengthy treatise, this book written by so prominent a dental leader will make a particular appeal. We commend it to our Canadian profession.

NEWS FROM THE PROVINCES

BRITISH COLUMBIA

At Dawson, B. C., arrangements have been completed for the first Health Unit in which five nurses will be stationed throughout the district. Complete free dental and medical services will be provided for needy school children and pre-school children.

The readjustment plan of Vancouver Properties Ltd., which owns the Medical and Dental Building, Vancouver, has been approved by the land holders. Under the new arrangement, bonds will bear interest at four per cent instead of six as hitherto. The reason for the change is to hold interest charges within earning capacity.

SASKATCHEWAN

Swift Current held recently an eleven-day drive to secure funds for dental work and eyeglasses for children of local parents on relief.

MANITOBA

The Annual Golf Tournament of the Western Manitoba Dental Golf Association was held at Clear Lake on the first week-end of September.

Dentists from Neepawa, Minnedosa, Brandon, Souris, Virden and Winnipeg were present and a very enjoyable time was had.

Dr. A. R. Hurst, of Brandon, won the first flight with which goes the Ash Temple Cup. The winner of the second flight was Dr. L. A. McLean, of Minnedosa, and a prize from the Dental Company of Canada went to him.

ONTARIO

RED CROSS DENTAL COACH

Districts which had never before had any dental care were visited by the "Red Cross Dental Coach" which reached Toronto September 12, after a 26-month tour of Northern Ontario in charge of Dr. Bert L. Washburn and his wife. During the tour, Dr. Washburn visited 81 northern schools during 18 weeks and treated 2,683 patients. He extracted 20,000 teeth, gave prophylaxis to 2,000 patients and filled 10,000 teeth.

Dr. J. C. Brown, of Kingston, turned in the lowest gross at a golf tournament held

during the convention of the Eastern Ontario Dental Association.

TORONTO AND DISTRICT DENTAL GOLF ASSOCIATION

Annual Fall Tournament, September 12, 1935

Best net score 36 holes—(Dr. R.

G. McLeans' Cup) J. Trelford 135

Best gross score 18 holes—(Dr. S.

A. Elliott's Cup) L. Hipwell 84

1ST FLIGHT PRIZES:—

Best gross for 18 holes L. Hipwell

Second gross 18 holes J. D. Evans 85

Best net for 18 holes P. A. Beattie 92-20—72

Second net for 18 holes

R. B. Bennett 88-14—74

Best 9 holes G. V. Morton 42

2ND FLIGHT PRIZES:—

Best gross for 18 holes

A. A. Somerville 92

Second gross 18 holes

F. W. Vivian 100

Best net score—(Dr. W. M.

Box's Cup) W. L. Hugill 101-31—71

Second net for 18 holes

C. G. Stewart 102-30—72

Best 9 holes W. F. Holmes 48

Kicker's sealed handicap

R. W. Hoffman 74

OFFICERS 1936

President—T. W. Dawson.

Vice-President—R. W. Hoffman.

Sec.-Treasurer—W. Clarke (Hamilton).

Chairman—Handicap Committee—R. S. Woollatt.

The *Toronto Academy of Dentistry* at its annual Dinner meeting held in Eaton's Round Room, College St., presented Dr. Andrew J. McDonagh with an Honorary Life Membership. Congratulations, Dr. McDonagh. Previous Honorary Life Members are Dr. A. E. Webster, Dr. W. E. Wilmott and Dr. Harold Clark.

Dr. A. T. Morrow, of Maxville, Ontario, has been made president of the Ontario Educational Association.

The *Toronto East Dental Society* staged their annual fall golf party at Rouge Hills Club on October 2nd. Dr. Fred Flora with Drs. Fred Loucks, Leon Hipwell and Harold Hoag as his committee arranged a splendid

tournament at which East End Dentists entertained their confrères from other parts of the city. This is one golf meeting where every player gets a prize, the competition being to see who gets the best one. Dr. Russ Hoffman and Dr. Fred Loucks put on a stiff battle and Russ won by a toss to break the tie.

The program of the *Toronto Academy of Dentistry* this year looks most attractive. The executive council have spared no effort in arranging for outstanding essayists to come to Toronto. Tentative dates are as follows:—

October 28 — Monday — Annual Dinner Meeting, Eaton's Round Room; Guest Speaker, Dr. E. C. Rosenow, Mayo Foundation; Subject, Importance of Focal Infection as Related to Health.

November 27 — Wednesday — Osler Hall, Academy of Medicine; Guest Speaker, Dr. M. M. DeVan, Philadelphia; Subject, Methods in Treatment of Overbite in Adult Dentition.

January 9—Thursday—Osler Hall, Academy of Medicine; Guest Speaker, Dr. I. Hirschfeld, New York; Subject, Periodontoclasia.

January 29 — Wednesday — Annual Ladies' Night Dinner Dance, Eaton Auditorium—Stanley St. John's Orchestra.

February 13 — Thursday — President-Elect's Night, Osler Hall, Academy of Medicine; Table Clinics and Demonstrations.

March 4—Wednesday—Osler Hall, Academy of Medicine, Past Presidents' and Fraternal Night; Guest Speaker, Dr. Winston C. Bushell, Montreal Clinic Club; Subject, Porcelain.

March 18—Wednesday—Osler Hall, Academy of Medicine; Guest Speaker, Dr. Walter C. McBride, Detroit; Subject, Children's Dentistry—Treatment of Fractures in Anterior Teeth of Children.

April 9—Thursday—Public Dental Health Night, Osler Hall, Academy of Medicine. Selected.

QUEBEC

At the Annual Fall Golf Tournament of the Montreal Dental Club, Dr. R. E. McMahon won the low gross prize, and Dr. M. L. Donigan the low net.

McGill Dental Faculty again shows a steady increase in registration with a high standard of scholarship maintained.

NOVA SCOTIA

The *Halifax Dental Society* held its Annual Meeting at the Nova Scotian Hotel on the evening of September 26th. The President, Dr. Gordon Ross Hennigar, occupied the chair. In presenting a review of the activities of the Society for the year just past, he reported the following:—

Sept. 27th, 1934—Golf and election of officers.

Nov. 1st, 1934—Dr. A. W. Faulkner gave a paper on "Dental Health Insurance". Drs. G. A. Chudleigh and H. M. Eaton gave a report on the Fall Clinic of the Montreal Dental Club.

Dec. 6th, 1934—Dr. J. S. Bagnall and Dr. A. B. Haverstock reported on their work in connection with the Dalhousie Health Clinic.

Feb. 7th, 1935—Dr. Allan Curry (surgeon) and Dr. Stephen Johnston (radiologist) discussed "Carcinoma of the Mouth and Lips" and "Radiation Therapy" respectively.

March 4th, 1935—Dr. Wm. W. Woodbury addressed the Society on "The Physiological Status of the Tooth".

April 6th, 1935—Dr. W. L. Barnstead read a paper on "Root-Canal Therapy".

August, 1935—Medical and Dental Golf Match. It was announced that Dr. Alan Curry desired to donate a Cup for annual competition.

The succeeding Officers and Committees were elected as here named:

President—Dr. A. B. Haverstock.

Vice-President—Dr. W. Leon Fluck.

Sec'y-Treasurer—Dr. J. F. Griffin.

Additional Member of the Executive Committee—Dr. H. M. Eaton.

Property Officer—Dr. H. S. Crosby.

Auditors—Drs. G. A. Chudleigh and G. K. MacIntosh.

Members of the Oral Hygiene Education Committee—Drs. G. A. Chudleigh, G. M. Dewis, and W. H. H. Beckwith.

Several of the members spoke of the great loss sustained by the Society through the death of Dr. George Kerr Thomson, and Drs.

S. G. Ritchie and W. W. Woodbury were asked to prepare a suitable minute in connection therewith, to be inscribed in the records.

A resolution was passed denominating the Journal of the Canadian Dental Association as the official organ of the Society.

After the business of the meeting was concluded, Dr. S. G. Ritchie gave a thoughtful and interesting address on the topic "Some Problems in Ethics", which was well-received.

Dr. S. K. Oldfield has returned to Halifax

after undertaking a personal course of research work in the X-Ray department under Dr. Houghton Holliday of Columbia University School of Dentistry. (*Halifax Chronicle*, Oct. 2).

Dr. J. H. Rice has disposed of his splendid residential property on Young Avenue.

Dr. G. H. Fluck is entering on his fifty-third year of active practice in the profession of dentistry. There are few in Canada to equal that record.

EMPIRE NEWS

SOUTH AFRICA

DENTISTRY IN SOUTH AFRICA

There are six hundred and ninety-one dentists practising in South Africa. The European population is just over two millions and the non-European population is about eight and a half millions. Comparatively little work is done for the non-Europeans.

In 1928 the Medical, Dental and Pharmacy Act was passed. Thirty unqualified men were put on the Register and it was hoped that the Act was watertight. The profession is now fairly well protected — but a few loopholes have been found in the Act by the unscrupulous.

Of the qualified dentists five hundred and nineteen hold British degrees or diplomas; ninety-seven hold American degrees; eighteen possess the B.D.S. of the University of the Witwatersrand — our one and only dental school. Eleven qualified in Holland and eleven hold Continental and American degrees which are no longer recognized by the S. A. Medical Council. Only three American dental schools are recognized over here—to wit, Michigan, Harvard and Pennsylvania. There are fourteen dentists who possess both British and American qualifications.

There is no dental board in South Africa. The destinies of dentistry are apparently in the hands of the Medical Council which reigns supreme. However it is the custom to refer dental matters to a dental executive of the medical council. There are three dental

members elected to the Council and the Government appoints one member.

The profession in South Africa is very well organized. Seventy per cent belong to the South African Dental Association through its affiliated branches.

Pretoria has thirty-seven dentists and boasts one hundred per cent membership in its branch. The Transvaal Province has a ninety-two per cent membership in the Transvaal Dental Association.

A rather interesting controversy was settled a few years ago when the Medical Council granted the courtesy title of Doctor to all qualified dentists. Before this a disintegrating influence was always at work in the profession. The American graduate was "Doctor" and the English graduate was "Mister". It is customary now for all dentists to be known as Doctor.

"What's in a name?" may well be asked—but nevertheless the removal of this small cause of irritation has helped to solidify the profession and it no doubt will eventually raise its status.

While on this question of the organization of the profession in South Africa, Dr. Bird's name cannot be left out. It is largely due to his efforts that the profession owes its splendid solidarity. In this connection he was awarded the honorary F.I.C.D. He is at present president of the S. A. Dental Association and the Transvaal member on the Medical Council.

H. GOLDIN.

GREAT BRITAIN

ANOTHER GREAT INDUSTRIAL UNDERTAKING ESTABLISHES WORKS DENTAL CLINICS

Imperial Chemical Industries, Ltd., have extended their staff medical service by the experimental establishment of dental clinics at three of their larger works.

Sir Harry McGowan, K.B.E., the chairman and managing director of the company, in referring to this fact in the course of his speech at the annual general meeting, said that the step had been much appreciated by their workers, and, indeed, difficulty had been experienced in coping with the demand for dental work.

Of the company's medical service generally, Sir Harry said that, looked at by itself, it involved considerable expenditure but they knew that it brought an ample return in the mini-

mization of sickness and absenteeism, with a consequent enhancement of efficiency, and, most important of all, it gave men and women that sense of well-being only to be derived from good physical health.—*The Dental Magazine and Oral Topics*—July, 1935.

AUSTRALIA

TIN TEETH

Tom Gay, who lives at Herberton, in North Queensland, spends his time prospecting for minerals in the surrounding country-side. Needing artificial teeth, he constructed a set for himself without professional aid of any kind. First he took an impression for himself in beeswax, cast a model in plaster, made a mould and into this, ran tin which he had smelted from alluvial scratched in the gullies.—*The Dental Magazine and Oral Topics*—July, 1935.

GENERAL NEWS

DENTAL PRACTICE ACT TO BE ON BALLOT IN OREGON, U. S. A.

Oregon dentists will be called upon to defend the recent amendment to the dental practice act, and, if present indications are correct, it will be in the form of a constitutional amendment proposed by initiative petition and placed on the November, 1936, ballot.

S. T. Donohue, of Eugene, has filed application for a place on the ballot for such a constitutional amendment. Attorney-General I. H. Van Winkle has assigned the following title to the proposed measure:

"To forbid by constitutional amendment the prohibition or regulation of any advertisement of any business, vocation, profession, service or of the sale of any goods or other property, or of any quality, price or other detail in connection therewith, provided the advertisement states the truth; and repealing all pro-

visions of existing laws making such regulation or prohibition."

It will be seen that dentistry is not mentioned and is cleverly camouflaged to cover up the real intent. Undoubtedly, the press will support the measure and it will have to be actively fought by every dentist in the state.—*The Journal of the Oregon State Dental Association*, September, 1935.

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NEW PROFESSIONAL JOURNAL

The Fort Wayne Medical Society, the Fort Wayne Academy of Medicine and Surgery and the Isaac Knapp District Dental Society, (U.S.A.) have arranged to publish a joint bulletin, known as the Caduceus. It is the intention to foster a closer relationship between the medical and dental professions. The first issue appeared in September.

IN MEMORIAM

JOHN W. MALLABAR—of Toronto, Ontario, died suddenly on October 10, at his resi-

dence, 189 College Street. He had served overseas with the Twenty-seventh Battalion.

SECTION FRANÇAISE

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ETUDE DE L'INFECTION FOCALE, LOCALISATION ELECTIVE ET RAPIDITE CATAPHORETIQUE DES STREPTOCOQUES

par ED. C. ROSENOW, M.D., Rochester, Minnesota.

(Résumé) *The Dental Cosmos*. Juillet 1934.

Traduction du texte anglais par Alcide Thibaudeau, D.D.S., Montréal.

EN étudiant le tableau (I), (voir page 503) on peut se faire une idée passable de l'association constante de l'infection aux différentes maladies constitutionnelles chez les patients tels qu'ils se présentent à la clinique Mayo.

Les dents dépulpées, sans symptôme radiologique, les bouts de racines, les restes de foyers d'infection dans les maxillaires, les dents complètement ou partiellement incluses, les accumulations de pus, ignorées ou considérées comme inoffensives sous des dents temporaires aussi bien que d'autres foyers sont ordinairement infectés de streptocoques.

Des statistiques révèlent que 80 à 90 pour cent des adultes recèlent des dents aux canaux remplis, et qu'en moyenne 69.5% de ces dents donnent à l'examen radiologique des raréfactions périapicales dues à l'infection.

En faisant des cultures, surtout dans un bouillon de cervelle et dextrose, et un mélange doux de dextrose-cervelle et agar, (milieu offrant une gradation de la tension d'oxygène) et des cultures aérobiques sur fond de sang-agar, j'ai trouvé infectées de streptocoques, pratiquement toutes les dents dévitalisées chez des patients souffrants de désordres constitutionnels. Et ceci sans considération du rapport positif ou négatif des radiographies. Dans cette même catégorie de patients, en faisant des cultures de leurs dents exemptes de pyorrhée, de caries ou d'obturations, les résultats furent uniformément stériles. Ces conditions indiquent que l'ablation de la pulpe transforme l'apex et les tissus environnants en "locus minoris resistentiae" et cette région s'infecte plus facilement. Le problème est de garantir contre l'infec-

tion, canaux et chambres pulpaire pour des années. Renfermer des antiseptiques dans un canal et le remplir de substances impénétrables de n'importe quelle sorte ne suffit pas, car j'ai isolé des streptocoques, de dents ainsi traitées depuis longtemps, et, avec ces extraits frais, reproduit la maladie dont souffrait le patient. On peut aussi mettre en évidence l'effet nuisible des dents dépulpées et des autres foyers d'infection par le fait que les hémocultures sont deux fois plus souvent positives chez les personnes apparemment bien mais atteintes d'infection focale chronique, que chez les personnes exemptes de tels foyers.

Où se loge de préférence le microbe après les injections intra-veineuses?

Injecté aux animaux, le streptocoque (rarement les autres bactéries), choisit ordinairement comme refuge les mêmes tissus ou organes qui, chez les patients, étaient affectés. Les résultats condensés dans le tableau (II) (voir p. 504) indiquent le degré d'organotropisme après injections intra-veineuses des streptocoques isolés de personnes malades. Il indique aussi l'absence de cette faculté chez ceux qui viennent de personnes en bonne santé ou souffrant de maladie non streptococciques. C'est pour faciliter la comparaison qu'on énonce en pourcentage la présence des lésions dans les divers organes.

Si l'on injecte à un animal, des streptocoques isolés de dents extraites en pleine pulpite, en plus d'aller se loger dans les mêmes organes qu'ils infectaient chez le patient on les localise aussi dans les pulpes des dents.

Presqu'invariablement cette faculté des streptocoques de se localiser dans un endroit déterminé de l'organisme, se rencontre dans l'arthrite et myosite infec-

tueuses chroniques, la fièvre rhumatismale, l'ulcère d'estomac, l'appendicite, cholécystite, néphrite, névrite, l'herpès, névralgie, l'érythème noueux, endocardite et myocardite.

Si l'on fait à des lapins des injections intra-veineuses de streptocoques provenant de divers foyers d'infection dans une série de cas de névralgie intercostale consécutive ou non à des attaques d'herpès, il s'en suit une infiltration hémorragique des racines postérieures avec localisation de streptocoques généralement sans herpès ou autre lésion. La suppression des foyers, dans les cas où le streptocoque avait démontré une puissance d'infection élective, a donné une amélioration marquée. (Fig. 1 et 2, voir p. 505.)

Du staphylocoque prélevé d'une amygdale ou d'un sinus maxillaire infectés chez un patient souffrant d'une néphrite grave, se localise dans les reins du lapin si on le lui injecte par voie intra-veineuse, et produit aussi une néphrite chez le chien si on loge ce microbe dans des dents dévitalisées. Bien plus, des symptômes et des changements caractéristiques dus à cette électivité du streptocoque inoculé dans les dents des chiens furent reproduits par Rosenow et Meisser dans des cas de néphrolithiase, (Fig. 3 voir p. 505) par Meisser, dans des cas d'ulcère d'estomac, et par Rosenow, dans des cas de chorée ou de hoquet épidémique.

De même, Cook a produit des colites ulcéreuses en provoquant des foyers d'infection dans des dents de chiens avec des diplostreptocoques de Bargen qui ont cette faculté de localisation dans les cas de colites ulcéreuses.

Les conditions périodentaires chez les chiens furent similaires à celles que cause

chez l'homme l'extirpation d'une pulpe par le dentiste. Les dents infectées se décolorent, tout en restant fermement attachées aux alvéoles. L'infection causa une raréfaction et une résorption du tissu osseux périapical (Fig. 4, voir p. 505) sans enflure, ni douleur ou sensibilité. L'infiltration cellulaire et la distribution du diplocoque, dans le granulome formé, furent aussi semblables. Les streptocoques, isolés de dents conservent ordinairement leur faculté de localisation, souvent plusieurs mois après leur inoculation. Des injections intra-veineuses chez des lapins nous le démontre.

Afin d'éliminer l'usage des animaux et de déterminer, si possible, sur quoi reposent les raisons de cette localisation élective, Jensen et moi avons étudié les streptocoques qui ont ce pouvoir, au point de vue cataphorétique. Pratt, Sheard et moi avons aussi étudié les résultats d'une exposition à un champ de haute fréquence des streptocoques qui possèdent, avec un pouvoir de localisation élective, une rapidité et un temps de cataphorèse caractéristiques. Entre autres faits intéressants, il fut découvert qu'entre la localisation élective, le temps et la rapidité cataphorétiques des streptocoques, il existe un parallélisme très rapproché. Les détails de la technique furent décrits dans les rapports déjà publiés. Il suffira d'énoncer ici que le taux de migration, dans un champ électrique sous un voltage constant, est déterminé par observation directe dans la cellule cataphorétique de l'appareil Northrop-Kunitz-Mudd.

Dans la figure (5 voir p. 506), on remarquera les courbes du temps et de la rapidité cataphorétiques de streptocoques prélevés respectivement de dents infectées chez des personnes en bonne santé et

chez d'autres souffrants de maladies nerveuses.

Maintenant je puis souvent prédire avant l'injection d'une culture donnée, si la localisation sera spécifique ou non, en déterminant la courbe de temps et de rapidité cataphorétiques du streptocoque. Ceci nous éclaire sur un fait, autrement incompréhensible, et souvent observé dans le travail de localisation élective. C'est-à-dire: la soudaine disparition de tout pouvoir de localisation ou l'apparition de nouvelles affinités après des passages en séries dans des animaux ou des repiquages répétés.

Commentaires généraux

En général, dès le début d'une maladie, le plus tôt on éliminera les foyers d'infection, surtout avant l'apparition de symptômes constitutionnels, les meilleurs seront les résultats. De nos jours, encore, continue d'exister cette commune et déplorable coutume d'attendre que la maladie soit avancée ou que des complications sérieuses se manifestent, comme l'hémorragie dans l'ulcère, l'attaque dans une maladie du coeur, parfois même on attend la vieillesse du patient, avant de faire disparaître des foyers, évidents surtout des dents dévitalisées.

Les racines des dents nécrobiosées, leurs tissus environnants deviennent plus susceptibles d'infection que ceux des dents vivantes. La majorité des dents sans pulpes, quel que soit le rapport radiologique, sont infectées et deviennent, par là même, des foyers d'infection en puissance.

La dévitalisation et l'obturation des canaux radiculaires telles qu'on les pratique depuis plusieurs années devrait cesser. Heureusement qu'on utilise de moins en moins ce procédé, toujours

difficile, dispendieux et souvent incertain. Beaucoup de ceux qui autrefois pratiquaient habilement cet art ne le trouvent plus nécessaire maintenant. Ils jugent plus prudent d'extraire les dents sans pulpe et d'attacher leur pièce d'une façon inoffensive à une dent vivante. Il est à souhaiter qu'on trouve un moyen efficace, non seulement de stériliser les racines et les tissus environnants mais aussi de prévenir la récurrence surtout dans les tissus péri-apicaux. Atteindre ce premier but semble presque impossible. En attendant, il sera plus sage d'enlever toutes dents infectées ou dépulpées plutôt que de les conserver au risque de les voir se transformer en source d'infection insidieuse, déprimante et peut-être fatale. Les dents vivantes libres de pyorrhée ou d'obturations ne devraient jamais être extraites, à moins de nécessité pour certaines restaurations, mais on devrait, il me semble, enlever toutes les dents sans pulpe, presque sans égard à l'aspect des radiographies. En l'absence de toute autre source d'infection, il me semble que les amygdales de tous les patients souffrant de désordres constitutionnels soupçonnés d'origine focale, à moins de contre-indications, devraient être enlevées, qu'elles soient volumineuses ou petites, visiblement infectées ou non. Des résidus d'infection dans les maxillaires même édentées, sans indice révélateur, souvent difficiles à dépister, ont régulièrement relevé la présence du streptocoque. Ils devraient être éliminés plus souvent. La localisation élective du streptocoque isolé de poches de pyorrhée a été démontrée couramment après les injections intra-veineuses. Ceci fait voir l'importance de la périodontoclasie comme foyer d'infection. Il importe

donc que l'on prenne les moyens d'enrayer cette maladie si répandue.

Les dents, spécialement les multiradiculaires, avec obturations ou caries profondes, qui donnent l'évidence d'infection pulpaire, avec ou sans calculs, et même les dents apparemment normales, réagissant à l'épreuve de vitalité, mais largement obturées, peuvent devenir des sources de désordres constitutionnels et devraient être enlevées. Toutefois, on ne doit procéder ainsi qu'après avoir dûment recherché toutes les autres sources possibles d'infection. J'ai fréquemment noté des gains appréciables après l'extraction de telles dents quand toutes autres tentatives avaient échoué, spécialement lors de l'avulsion de la dent avec pulpes nécrobiosées fortement infectées. L'injection directe de matière bactériefère, provenant de telles dents fut souvent suivie de réactions extrêmement graves.

En général, il vaut beaucoup mieux enlever les dents infectées au risque de diminuer la puissance de mastication du patient, que de les conserver quand il y a indices de maladie d'origine infectieuse. Je n'ai jamais rencontré de désordres gastro-intestinaux dus au manque de surface triturante. D'autre part, des patients souffrants de troubles divers ont vu leur état général s'améliorer et tous les symptômes disparaître après l'extraction de leurs dents infectées, avant même la mise en place de prothèses.

Concédonc qu'un mode de vie convenable et une bonne hérédité sont de puissants facteurs préventifs contre les maladies infectieuses de toutes origines. Mais pourquoi, par des foyers d'infection évitables ou facilement éliminés, risquer d'affaiblir ou de ruiner ces moyens de défense de la Nature.

La présence presque habituelle des streptocoques dans les foyers, leur pouvoir spécifique de localisation tel que prouvé par les différentes méthodes d'inoculation, leur temps et leur rapidité caractéristiques de cataphorèse, leur pré-

sence dans les lésions de production spontanée ou expérimentale, l'action spécifique du sérum sanguin des patients, tout indique que les streptocoques ont relation causale avec les maladies que nous avons étudiées.

ECZEMA REBELLE GUERI PAR AUTO-VACCIN PROVENANT D'UNE SOUCHE FOURNIE PAR HEMO-CULTURE GINGIVALE⁽¹⁾

par MM. RENE VINCENT et RESNICK.

NOUS vous demandons de bien vouloir constater un résultat thérapeutique qui nous semble particulièrement éloquent.

Nous n'entendons pas discuter aujourd'hui les interprétations pathogéniques qu'il soulève, mais seulement souligner l'intérêt de l'hémo-culture gingivale dont témoigne de façon évidente le "fait clinique" que nous vous présentons.

La malade que nous allons vous montrer est âgée de cinquante et un ans et exerce la profession de concierge: soignée en novembre à Saint-Louis au bismuth pour une spécificité ancienne, elle nous a été adressée le 22 novembre à l'Institut Prophylactique pour traiter une stomatite bismuthique éclos à l'occasion de son traitement.

Il s'agissait d'une stomatite banale de moyenne intensité apparue chez une pyorrhéique ancienne présentant des lésions inflammatoires et suppuratives

étendues, dès les premières piqûres de bismuth ainsi qu'il est de règle. (2).

L'examen général révèle d'ailleurs en corrélation évidente avec cette pyorrhée avancée un long passé de colite chronique caractérisée par une constipation habituelle interrompue par des débâcles diarrhéiques.

On est, d'autre part, frappé par la présence d'un eczéma étendu recouvrant les doigts, les mains et les avant-bras. Cette dermite vésiculeuse et suintante sur un revêtement cutané rougeâtre très épaissi et infiltré, est le siège d'un intolérable prurit.

Des lésions de même nature sont encore visibles sur la face externe des jambes.

L'anamnèse nous apprend que cette affection locale remonte à 1930. Depuis cette époque, les traitements les plus divers et notamment les traitements de choc, les régimes les plus sévères, les

(1) Communication à la Société de stomatologie, séance du 19 mars 1935.

(2) Pathogénie de la stomatite bismuthique (Bulletin de la Société française de dermatosyphiligraphie, No. 3, 1934 [René Vincent]).

pommades les plus variées n'ont pas eu le moindre effet sur cette dermite. Elle a été soignée successivement à l'hôpital Broussais et à l'hôpital Saint-Louis. Les fiches de traitement que nous avons pu nous procurer montrent qu'en 1930 elle à subi six séances de radiothérapie aux mains et quatre aux jambes sans résultat, qu'en 1931 à Saint-Louis elle a été alternativement traitée par l'auto-hémothérapie et l'hyposulfite de soude aussi bien "per os" que par injections intraveineuses.

En 1932, la fiche porte quatorze séances d'auto-hémo-thérapie, débutées à 5 centimètres cubes et terminées à 20 centimètres cubes, et quatre injections intraveineuses d'hyposulfite de soude de 5 à 20 centimètres cubes.

En 1933 et 1934, de nouvelles tentatives de médication de choc ou de désensibilisation sont encore tentées régulièrement sans apporter à la malade la moindre amélioration.

Depuis 1930, le régime alimentaire, des plus sévère, est strictement observé, et les mains et les avant-bras sont protégés par des gants de caoutchouc quand les obligations ménagères forcent la malade à mettre les mains dans l'eau.

Lors de l'examen de la malade, le 22 novembre 1934, nous pratiquons, comme nous avons accoutumé, une hémo-culture gingivale qui nous donne un entérocoque en culture pure. Le 7 décembre, nous commençons une série d'injections sous-cutanées d'auto-vaccin préparé avec ce germe, à raison de deux par semaine et en débutant par un quart de centimètre cube, puis un demi et un tiers de centimètre cube.

Après la troisième injection, nous assistons à la disparition soudaine et com-

plète des éléments vésiculeux et du prurit.

La quatrième piqûre faite avec le centimètre cube entier est suivie d'une récédive, à la vérité légère, sur la face dorsale des mains. Nous supprimons toute nouvelle injection pendant quinze jours, supposant à juste titre la dose trop élevée et nous reprenons à raison de un quart de centimètre cube seulement, espacé de semaine en semaine, puis de quinzaine en quinzaine.

Dès la première piqûre, l'eczéma disparaît à nouveau pour ne plus reparaître.

Depuis trois semaines nous avons suspendu toute nouvelle injection et supprimé tout régime ou traitement local à la malade.

Elle mange du poisson en abondance, plat d'autant plus apprécié que la malade en avait été privée depuis cinq ans, des choux, etc. Elle a remis les mains dans l'eau pour faire sa vaisselle et sa lessive.

Vous pourrez constater aujourd'hui, soit deux mois et demi après le début du traitement par l'auto-vaccin rendu possible par l'hémo-culture gingivale, la disparition totale de cet eczéma, rebelle pendant cinq ans à tout traitement.

Le derme, encore un peu infiltré, témoigne encore éloquemment de l'étendue et de la sévérité des lésions.

Ajoutons enfin que l'intestin fonctionne normalement malgré l'absence de tout régime, que, sans aucune intervention locale (même pas un détartrage), la stomatite bismuthique a disparu en quinze jours et que l'état pyorrhéique s'est considérablement amélioré.

LE FRAISAGE INDOLORE

LE Docteur P. Aliot a présenté à la Semaine Odontologique en France un travail sur l'utilisation de la haute fréquence comme analgésique pour la préparation des cavités.

Le *Siècle Dentaire*, numéro du 15 octobre, 1935, nous donne des détails intéressants sur la manière de procéder.

Le Docteur Aliot utilise la haute fréquence depuis deux ans avec d'excellents résultats. Voici deux observations cliniques:

"Le premier cas. Femme de 40 ans présentant une perte de substance coronaire réduisant du tiers la hauteur de sa dent de 12 ans, inférieure droite; la région proximo-distocervicale était détruite, comme dans toutes les dysplasies coronaires, la face triturante était lisse, concave. J'ai réussi, luttant difficilement contre la salive chez cette personne, à préparer une cavité rétentive. Quoique ayant affaire à ce qui est communément appelé une carie brune, la fraise était dès le début difficilement supportée; joignant le meulage au fraisage, il m'a été permis d'asseoir sur cette cavité aux bords trapus un inlay de reconstitution.

"Ceci date de six mois et la malade que je suis pour d'autres traitements est tout à fait tranquille.

"Le second cas est malheureusement fréquent et fait partie de ceux qui nous déçoivent par leur récurrence—cas de polycaries—chez des enfants ou jeunes gens de 8 à 20 ans.

"J'ai voulu essayer cette méthode chez un jeune homme rebuté, ne voulant plus entendre parler de dentiste. Son père, un confrère, ne pouvant lui-même lui faire entendre raison et certains élèves ayant con-

staté les résultats obtenus devant eux, m'ont amené ce jeune incrédule. A l'examen buccal, j'ai vu de multiples caries dont la dentine était très sensible; ces dents décalcifiées, nous les connaissons tous pour leur hyperesthésie et l'extrême douleur que le patient accuse à l'exérèse. Grâce à cette méthode, j'ai réussi à lui donner le désir de continuer le traitement des autres caries.

Conclusions

Avec cette technique, la pulpe ne subit aucune altération, la cavité garde son exquise sensibilité au contact de la sonde exploratrice. Je l'ai fait constater par quelques chefs de services quelques semaines après l'intervention de fraisage. Aucune douleur post-opératoire non plus.

Ce n'est pas une diathermocoagulation menue, superficielle, puisque la dent est sensible à toutes les impressions extérieures et une simple gutta la protège parfaitement bien.

La cavité est de ce fait taillée rétentivement à fond plat, à parois solides, avec ablation des bords d'émail, trop souvent conservés, les parties proximales sont dégagées, l'exérèse de la denture altérée est parfaite. Il est possible de placer ainsi un ciment à l'oxyphosphate et de protéger la pulpe avec une reconstitution au silicate.

Pas de temps perdu non plus pour les clients, puisque l'obturation peut être faite instantanément.

Pas d'encombrement dans la cavité buccale, facilité d'accès pour les caries mal situées, instrumentation réduite puisque la fraise porte son analgésique avec elle. Constatation appréciable chez nos jeunes sujets.

Les multicuspidées nous présentent l'heureuse surprise de se laisser traiter très facilement comparativement aux monoradiculées.

Il est donc permis de constater que la

haute fréquence peut, elle aussi, apporter son concours dans cette petite intervention si décevante pour nous et pour le patient.

P. ALIOT.

L'USAGE DE LA BROSSE A DENTS EN ALLEMAGNE

ON vent de publier à Dresden des statistiques pour établir combien de gens se servent d'une brosse à dents personnelle ou commune à la famille. Si répugnante que puisse paraître, en Amérique, l'idée d'une brosse à dents de famille, dont tous les membres se servent à tour de rôle, en Europe, même en des pays aussi avancés que l'Allemagne, cette pratique est fréquente.

Les statistiques démontrent que 40% de la population se sert d'une brosse à dents personnelle ou commune. Vingt-six pour cent de la population utilise régulièrement la brosse à dents. Cinq millions d'enfants fréquentant les écoles

ne possèdent pas de brosses à dents, et au-delà de trente millions de la population ne se sert pas de brosses à dents.

On a remarqué que ces statistiques ne s'établissent pas chez une seule classe de gens, mais, au contraire, ils s'obtiennent dans tous les rangs de la société tant urbaine que rurale. Le manque de ressources financières est loin d'expliquer à lui seul l'usage si restreint de la brosse à dents.

Voici des chiffres susceptibles de consolider nos hygiénistes canadiens et même de les encourager.

P. H.

The British Dental Journal,
August 15th, 1935, p. 210.

EXAMEN HISTOLOGIQUE D'UNE EXTREMITÉ DE RACINE CINQ ANNEES APRES LA RESECTION DE L'APEX

POUR des raisons d'esthétique, une latérale supérieure dont l'apex avait été amputé cinq ans auparavant, est extraite.

Mr. Wellings fait un examen bactériologique et histologique de cette racine. Il obtient des colonies de microcoques. Au microscope il constate qu'une couche de ciment, de formation nouvelle,

recouvre la dentine mise à nu lors de la résection.

Ceci démontre clairement la possibilité de régénération et de prolifération du ciment sur des canalicules dentinaires sectionnés.

P. H.

The British Dental Journal,
August 15th, 1935, p. 209.

VOLUME ONE

THE JOURNAL OF THE CANADIAN DENTAL ASSOCIATION.

LE JOURNAL DE L'ASSOCIATION DENTAIRE CANADIENNE.



With this issue of the JOURNAL, Volume One is complete and is launched upon the seas of dental professional life in Canada.

*"Go, little book, God send thee good passage,
And specially let this be thy prayer:
Unto them all that thee will read or hear,
Where thou art wrong, after their help to call,
Thee to correct in any part or all."*

(CHAUCER).

The editor wishes to express his sincere gratitude to the publishers, who have co-operated whole-heartedly, and to officers and associates, who have worked with indefatigable zeal and without whose kindly interest this volume could not have been produced.

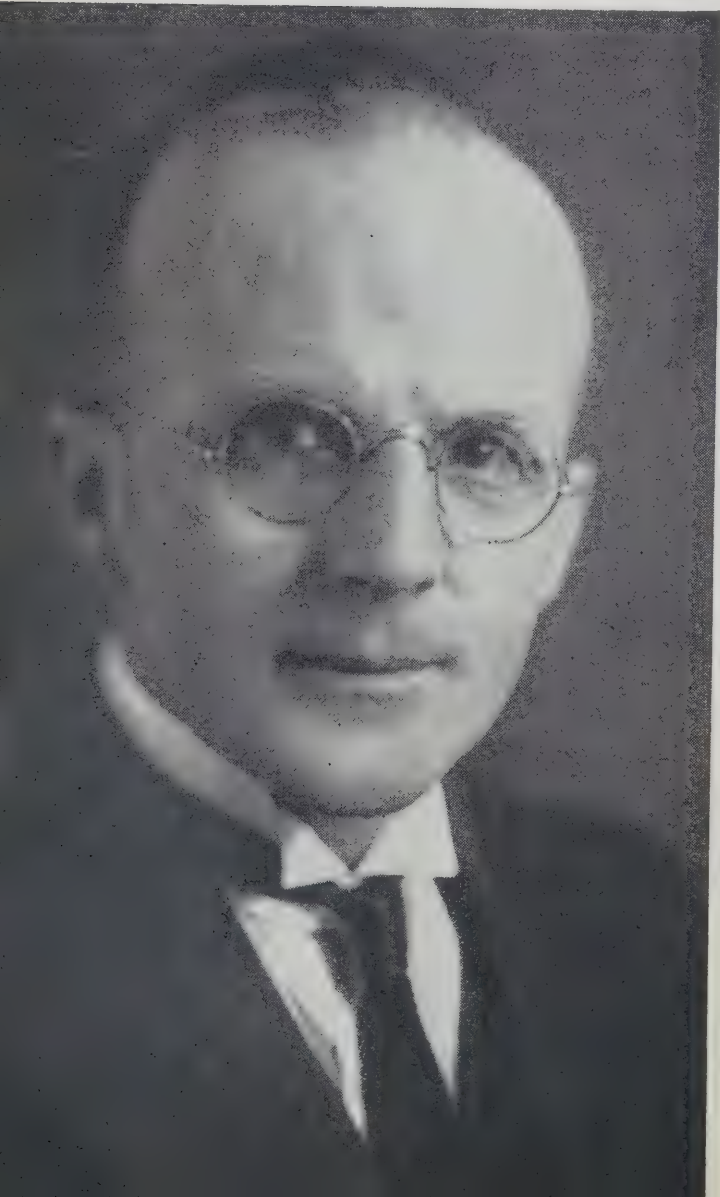
He would also mention with great satisfaction the perfect harmony, the splendid co-operation, and the spirit of tolerance and good-will, that have characterized every relationship between the French and English speaking dentists of Canada during the past year in developing a Journal truly national in character, the mouthpiece of the dental profession of two great races.

Further, he would venture the hope that this first edition of the JOURNAL, after careful perusal, will be found to attain, in a measure at least, to the expectations of the dental profession of Canada, upon whose support and loyalty its very existence depends.

M. H. G.

DOCTEUR VALMORE OLIVIER, D.D.S.,
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ROOT CANAL THERAPY AND ROOT CANAL FILLING

by L. F. KRUEGER, D.D.S., L.D.S.,

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ROOT canal therapy like every scientific field, even physiology, chemistry and physics is in more or less of a state of flux. It is one of a number of problems in health service which has to do with the general well being of an individual as well as oral efficiency, comfort and economy. It has to do with delicate tissues and organs of the human body, even the blood stream. In recent years research, having established certain facts and, a tentative consolidation of these facts into a working principle has made possible an increased measure of success.

Quoting Dr. C. J. Grove, *Journal A.D.A.*, Feb., 1931—"No one maintains that the problem is solved, but from what has been accomplished the prospects for a solution are encouraging, especially in view of the fact that the results obtained by root canal operators are equal to those of any other branch of operative dentistry."

In *Oral Health*, Jan., 1935, is reported that "Dr. W. Clyde Davis, of Nebraska, has made a survey of the dental colleges of the United States as to the number of dental pulps and pulpless teeth treated in college clinics in 1933-34. The outstanding features of the survey were:

1. That the teaching to fill root

canals under improved methods is on the increase.

2. That there is only one school in America which denies this practice to its students.

3. There are a few dentists and physicians who yet cling to the idea that extraction is the only remedy for the pulpless tooth.

4. Most of the universities report that they are now teaching methods of saving teeth with indications of local, as well as general health, following the treatment and filling of root canals."

Dr. Clarence Simpson states in his recent book on Radiodontia, "The pulpless tooth frenzy and the present shirking of canal operations have led to extreme pulp conservation with an epidemic of degenerating pulps. Pulps already infected from advanced caries are allowed to remain. Septic dentine is left to avoid pulp exposure. Large fillings without sufficient pulp protection (silicate) and, radical preparation of cavities under anaesthesia cause septic degeneration of many pulps."

From these quotations one may feel encouraged about the status of pulp canal treatment, appreciate that its practice is an important and necessary part of operative dentistry, and concede the

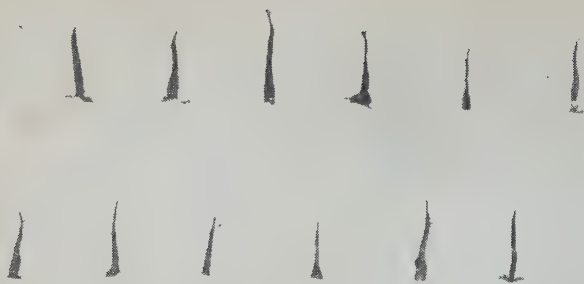


PLATE A 1.—UPPER CENTRAL INCISORS

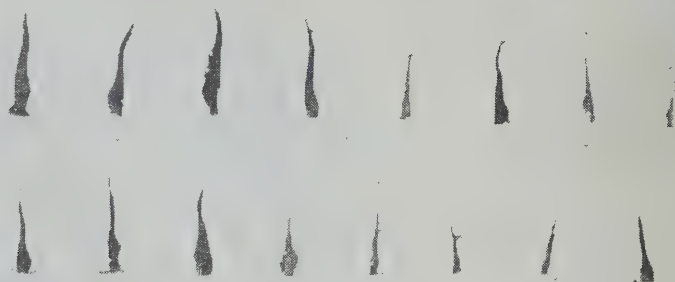


PLATE A 2. UPPER CANINES



PLATE C 1. UPPER FIRST PREMOLARS.

necessity for a more discriminating analysis, and rational therapeutics.

Teeth requiring pulp canal therapy may be divided into two classes, one in

which the tissues involved are confined to the root canal, the other in which the tissues involved extend beyond the canal. In each class are to be found varying

Root Canal Therapy and Root Canal Filling

degrees of tissue involvement and may or may not be causing pain.

An examination carried out with the idea of determining the extent of the tissue involvement, the state of the tissues involved and the probability of repair or healing or maintaining normal apical investing tissues is a factor of first importance.

Since recovery or reconstruction of any special tissue is influenced by the physical condition, the state of general health is a governing factor in determining the method of treatment and the probable outcome.

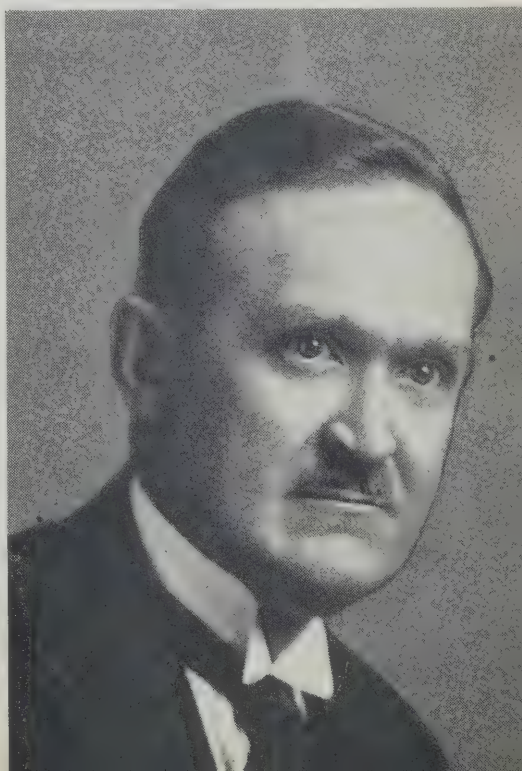
Since there is a constant changing in the size and structure of root canals throughout a lifetime, marked and rapid in youth in the active development period, and slow in later life, the age suggests the different stages of anatomical and physiological variations. To illustrate an example may be found in the simple form and large size of the canal of the central incisor at the age of ten, the reduced size with the probabilities of more than one foramen at twenty-five, the very fine canals and possibility of complete closure in the later years. The impossibility of determining the presence of multiple foramen and of removing the tissue from them and filling them by mechanical means would suggest this still an unsolved problem. Success in these cases undoubtedly is dependent on physiological closure and prevention of infection or re-infection from the canal.

The three plates (A1, A3, C1) are

from the textbook "The Anatomy of the Root Canals of the Teeth of the Permanent Dentition", by Walter Hess, M.D., D.D.S., Professor of Operative Dentistry in the Dental College of the University of Zurich. They are of interest and value in acquiring a correct knowledge of root canals of teeth. The entire book might well be made the object of careful study by anyone assuming responsibility in the dental field.

The Chronology of Human Dentition by Logan and Kronfeld (following page) provides an excellent basis for estimating the stage of development which in conjunction with the radiograph supplies much useful information.

In addition Black's table of average measurements of the teeth of man, given in millimeters, offers a reasonable basis of estimating the location of the apices of the roots of the teeth, this estimate to be used in approaching the end and



LOUIS F. KRUEGER

CALCIFICATION AND ERUPTION OF TEETH

Tooth		First Evidence of Calcification	Crown Completed	Eruption	Root Completed	
<i>Deciduous dentition</i>	Central incisor	5 mos. in utero	4 mos.	6- 8 mos.	1½- 2 yrs.	
	Lateral incisor	5 mos. in utero	5 mos.	8-10 mos.	1½- 2 yrs.	
	Cuspid	6 mos. in utero	9 mos.	16-20 mos.	2½- 3 yrs.	
	First molar	5 mos. in utero	6 mos.	12-16 mos.	2 - 2½ yrs.	
	Second molar	6 mos. in utero	10 -12 mos.	20-30 mos.	3 yrs.	
<i>Permanent dentition</i>	<i>Upper jaw</i>	Central incisor	3 -4 mos.	4 - 5 yrs.	7- 8 yrs.	10 yrs.
		Lateral incisor	1 yr.	4 - 5 yrs.	8- 9 yrs.	11 yrs.
		Cuspid	4 -5 mos.	6 - 7 yrs.	11-12 yrs.	13 -15 yrs.
		First bicuspid	1½-1¾ yrs.	5 - 6 yrs.	10-11 yrs.	12 -13 yrs.
		Second bicuspid	2 - 2¼ yrs.	6 - 7 yrs.	10-12 yrs.	12 -14 yrs.
		First molar	at birth	2½- 3 yrs.	6- 7 yrs.	9 -10 yrs.
		Second molar	2½-3 yrs.	7 - 8 yrs.	12-14 yrs.	14 -16 yrs.
		Third molar	7 -9 yrs.	12 -16 yrs.	17-30 yrs.	18 -25 yrs.
	<i>Lower jaw</i>	Central incisor	3 -4 mos.	4 - 5 yrs.	6- 7 yrs.	9 yrs.
		Lateral incisor	3 -4 mos.	4 - 5 yrs.	7- 8 yrs.	10 yrs.
		Cuspid	4 -5 mos.	6 - 7 yrs.	10-11 yrs.	12 -14 yrs.
		First bicuspid	1¾-2 yrs.	5 - 6 yrs.	10-12 yrs.	12 -13 yrs.
		Second bicuspid	2¼-2½ yrs.	6 - 7 yrs.	11-12 yrs.	13 -14 yrs.
		First molar	at birth	2½- 3 yrs.	6- 7 yrs.	9 -10 yrs.
		Second molar	2½-3 yrs.	7 - 8 yrs.	12-13 yrs.	14 -15 yrs.
		Third molar	8 -10 yrs.	12 -16 yrs.	17-30 yrs.	18 -25 yrs.

(LOGAN AND KRONFELD)

verified by radiograph with the first instrument used to approach this objective.

Upper	22.5	22.0	26.5	20.6
	<u>C.I.</u>	<u>L.I.</u>	<u>C.</u>	<u>1st B.</u>
Lower	20.7	21.1	25.6	21.6

BLACK'S TABLE

Upper	21.5	20.8	20.0	17.1
	<u>2nd B.</u>	<u>1st M.</u>	<u>2nd M.</u>	<u>3rd M.</u>
Lower	22.3	21.0	19.8	18.5

The conservative treatment of pulp involved teeth resolves itself into a program of a determination of the probability of the treatment being of value to the individual. This decision may be arrived at through a consideration of the physical condition of the patient which

embraces the state of general health, oral health, investment membrane and supporting tissue, the stage of development and anatomical make-up of the apex of the root and the pathology of the tissues. The mental attitude and social position of the individual has a bearing on the co-operation that is necessary in the attainment of whatever success may be possible under given circumstances and, last but not least, the economic factor may decide the issue.

In as much as root canal therapy should embrace the fullest understanding of all factors having to do with the prevention or correction of any oral dis-

Root Canal Therapy and Root Canal Filling

order and its relation to general welfare and that the fee may be made comparable with other similar services on that basis, it is possible from a time required viewpoint, to do a single root canal treatment and root canal filling on an inlay fee basis.

The mechanics and therapeutics must be practiced in accordance with biological principles, strict asepsis and avoidance of injury by improper instrumentation. One must use also non tissue destroying drugs and a filling material placed to the apico dental cemental junction that will prevent infection or re-in-



Figure 1.

fection of the canal or mechanical or chemical irritation.

With these principles in mind the following equipment is suggested:—A sterilizer that will sterilize dry dressings as

ROOT CANAL BROACHES LONG HANDLES

Suggested by Dr. A. E. Webster

Handle 70 x 3 mm. Shank 10 x 1 mm., marked with 4 encircling grooves 2 mm. apart. Working point 18 mm. long and .38 mm. in diameter at the mid point between the shank and apex for No. 1; for No. 3, .57 for No. 5, .75. Tapered uniformly from shank to mid point and more gradually from here to a sharp apex.

Form	Quality	Purpose	Size
Smooth	Soft temper	Pathfinder	1
			3
			5
Smooth	Hard temper	Pick	1
			3
			5
Smooth	Soft temper	Plunger (square end)	1
			3
			5
Barbed	Soft temper	Extractor (9 mm. of barbs)	1
			3
			5
Files	Hard temper	Enlarging canal by withdrawing	1
			3
			5
Reamers	Hard temper	Enlarging canal by turning	1
			3
			5

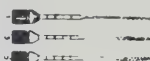
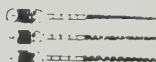
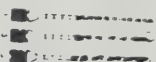
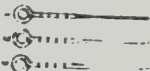
Figure 2.

The Journal of The Canadian Dental Association

ROOT CANAL BROACHES SHORT HANDLES

Suggested by Dr. A. E. Webster

Handle 6 x 3 mm. Shank 10 x 1 mm. Working point 18 mm. long, tapered uniformly to a point. Shank is marked with 4 encircling grooves 2 mm. apart.

Form	Quality	Purpose	Size
Barbed	Soft temper	Extractor	1 3 5
			
Files	Hard temper	Enlarging canal by withdrawing	1 3 5
			
Reamers	Hard temper	Enlarging canal by turning	1 3 5
			
NO HANDLES			
		Shank 10x1 mm. marked with 4 encircling grooves 2 mm. apart. Loop 2 mm. diam. Working point 18 mm. long, tapered uniformly to a point.	
Smooth	Soft temper	Measuring wire	1 3 5
			

Working Point

The working point is 18 mm. long and tapered uniformly from shank to apex.

No. 1 is .33 mm. in diameter at the mid point between the shank and apex.

No. 3 is .5 mm. in diameter at the mid point between the shank and apex.

No. 5 is .75 mm. in diameter at the mid point between the shank and apex.

Figure 3.

well as sterilize instruments by boiling. Figure No. 1 suggests a satisfactory type.

Paper points and cotton pellets are placed in packages of five or ten each, sterilized and ready for use at all times.

Determine beforehand the root canal instruments that will be required. Adjust the instrument control device to correct length. Sterilize by boiling before using. This makes for a sure, simple and time saving method.

In the selection and use of broaches in root canals, uniformity in size, weight, temper and quality makes possible the development of a keen sense of touch.

"Root canals are not seen, they are felt."
(Webster.)

Fig. 2 and Fig. 3 illustrate these principles, and are the equipment in use by the students in the School of Dentistry, the intervening and larger sizes in files and reamers from size 1 to 8 are desirable in special cases and should be added for use in practice. The student does not have these, but they are available in the clinical equipment. While this selection of instruments is not yet available in the open market, a close approach may be secured from the Kerr Mfg. Co., by ordering all broaches in the 26MM.

Root Canal Therapy and Root Canal Filling

length working end and uniform size handle.

INSTRUMENT CONTROL

The operator must determine the proper location at which instrumentation, medication and root canal filling should terminate, and that is, precisely where it should be caused to terminate. This device (Fig. 4) is submitted as an aid toward obtaining this accuracy with uniformity and confidence and with a minimum expenditure of time and energy. It is intended to be used in obtaining measurement of the canal and as a stop in conjunction with all instruments entering the root canal; that is, broaches, smooth and barbed, files, reamers and pluggers.

Through diagnosis, the objective in instrumentation, medication and root canal filling is determined; through root

canal measurements and the x-ray, this objective is established or verified. This device, attached to a root canal instrument and set at the ascertained length from a landmark on the tooth to the determined location, precludes with less speculation, the possibility of instrumentation or root canal filling beyond that objective.

By a knowledge of approximate length of root canals, a diagnostic radiograph, and by the sense of touch, one is enabled to approach quite closely the desired objective. With this device in position on the first instrument to be passed to the apex of a root canal and set as one's estimate of the length, it may be used to determine the length, in place of the usual measurement wire. This measurement is to be recorded in millimeters, as well as a drawing of the tooth and root to insure the use of the

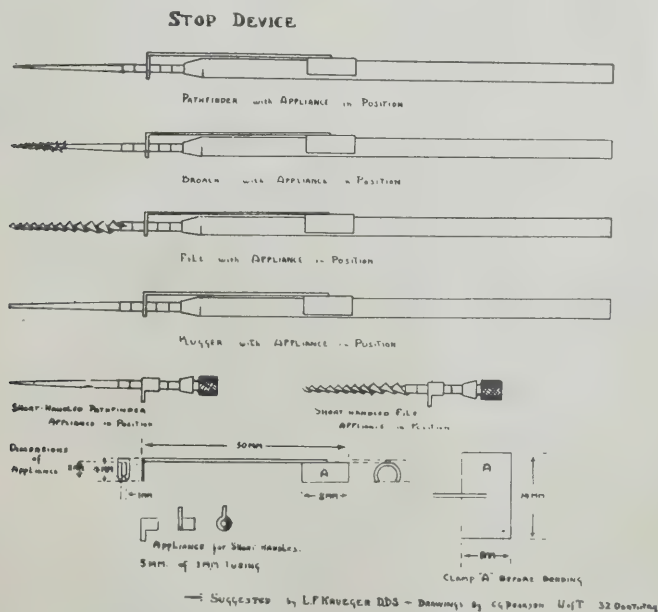


Figure 4.

same position as a landmark. At the same or subsequent sittings, in which enlarging the canal is undertaken, one may select the instruments required to accomplish the object in mind, equip them with the stop device set at the recorded length and feel assured of not traumatizing periapical tissues.

For the final or root canal filling operation this device lends itself excellently to the prevention of overfilling the canal:—the factor which prompts, in the greatest measure, the development of this device. Where a section of gutta percha is to be placed at a determined position, it can be done with an exactness that is gratifying. The clamp, by which this device is held securely in place, lends itself to adaptation to any reasonable-sized, long-handled root canal instrument such as is in general use today. It would seem reasonable to have all handles on root canal instruments of uniform size and length, as well as uniformity of broach projecting from the handle, thus reducing the assortment as well as eliminating much confusion.

The drawings (Fig. 4) are suggestive as to how this device may be made for use on long-handled instruments; as well as a device for short-handled instruments, the latter's value in use, being about equal to the value of the short handle as compared with that of the long handle.

CLEANING THE CANAL

First determine the state of the tissues of the canal. If the pulp is vital and anaesthesia has been employed, test for success of anaesthesia with smooth pathfinder broach with stop set at estimate length of apex from a permanent landmark, since it is highly desirable to re-

move all pulp tissue at this sitting. The location of the apex should be definitely established at this time by the first instrument to be passed to this objective. If the radiograph reveals that too long or short a length has been inserted, exact correction and record should be made. It is important that the operator knows at all times the exact position of the working point, for pulp removal. The radiograph will suggest the size or diameter of the extractor to select. It should pass to one side of the pulp, as far as the constriction, turned to engage the pulp and withdrawn. The use of instruments that are too large will act as a plunger and instead of removing the pulp will pack or force the tissue through the apex. Reaming the canal to the desired size may be done advantageously at the time of pulp removal, leaving nothing but the filling operation at the next sitting, or should conditions demand it, a canal dressing.

The use of small instruments followed by each larger size and gentle manipulation, effect a satisfactory preparation in little time and effort. It should be added that there are some canals which resist every attempt at proper preparation. A careful preliminary study of the radiograph, age and developmental factors should suggest the probable outcome.

PUTRESCENT PULP

The principles applying to removal of putrescent pulp or wet gangrene are the same as for vital pulp with the addition of the term *Caution*. While one might be allowed one thrust through the end of a root with vital pulp, this, in case of putrescence, would certainly invoke disaster. Neither instruments, tissue, drugs, infection nor materials should be forced

through the end of the root because under such circumstances there is almost certain to be extension of inflammatory process, associated with unnecessary discomfort to the patient, and the recovery period will be extended or the final successful outcome will be rendered less certain.

DRUGS IN TREATMENT

Vital pulps requiring removal are not healthy pulps, the probability being that there is a degree of infection confined to some part or all of the pulp—yet not beyond the apex. Vitality requires anaesthesia. Local application of cocaine and heavy pressure which would affect anaesthesia, would force infection through the end, as well as induce apical tissue destruction by the drug. Very light pressure which might induce absorption of the agent appears desirable in well selected cases. On the whole the safest measure is block or infiltration anaesthesia with novocaine.

With the pulp removed, healing by granulation of the apex is the object. Wash the canal with sterile water and alcohol and dry with paper points, that do not traumatize the apical tissues, and use a dressing of oil of cloves or a ten per cent solution of cresol in glycerine which (Groves) appears acceptable treatment. A three to five day period of rest should permit the filling of the canal. The tooth should be comfortable and the operator satisfied that the canal is free from infection.

*Putrescent Pulps, Wet Gangrene—*Confined to the canal. The first dressing in the *pulp chamber* may be formocresol using only the amount necessary to sterilize the canal contents. Since formocresol is a strong drug having affinity for mois-

ture it is contra-indicated in a dry canal since it would satisfy its affinity for moisture from the apical tissues. Following the cleansing and drying of the canal, a dressing of oil of cloves, creosote or chloro thymol (Groves) may be used and repeated if necessary, to insure comfort to the patient and a tooth free from infection.

Involvements extending beyond the canal may in addition to the root canal treatment outlined, require external drainage, curettage or amputation depending on the stage of pathology. If the apex is denuded of cementum, or the peridental membrane much involved, little may be hoped for in the way of success and should not be undertaken, except under the most favourable circumstances of the patient, and extraordinary skill of the operator.

Filling the root canal. (Webster) "There are two important considerations, first, to maintain a sterile condition, and second, the more important, to leave no condition that will now or later favour the growth of pathogenic bacteria.

PROPERTIES OF A PERFECT ROOT CANAL FILLING MATERIAL

1. The material should be liquid during the period of insertion and become solid a few minutes afterward.

Experiments. Mix up a mass in the proportions recommended, insert into a glass tube and note how quickly it hardens. The resin is soluble in either alcohol or chloroform, and when the solvent evaporates, the resin is left as a binder of the mass attached to the walls. (See experiments of Weston Price.)

2. It should not be capable of irritating vital tissues. Neither oxide of zinc nor resin have been shown to be irri-

tants to human tissues. (See experiments of W. D. Miller on copper amalgam; Jane Fraser on cements and amalgams; observations of F. C. Husband on copper amalgam; observations of Callahan on resin; and experiments of Buchanan on dogs, not yet published.)

3. It should be sparingly soluble in the fluids of the body that it is undetectable by chemical tests, but detectable by bacteriological tests.

4. It should be impermeable to both bacteria and moisture.

5. It should hermetically seal a root canal.

6. It should be permanently aseptic or antiseptic.

A formula for suitable root canal filling material is:

Oxide of zinc (bulk).....	80 Parts
Resin (binder)	17 Parts
Powdered Copper Amalgam	
(antiseptic)	3 Parts
Alcohol, Q.S. to make thin paste.	

This compound meets all the preceding requirements."

In large root canals this possesses sufficient radiopacity. In the smaller canals it is desirable to add bismuth subnitrate or precipitated silver. If the practice of enlarging all canals to a certain size is followed, the same proportions may be adhered to. If, however, it is the practice to fill small canals without enlarging, modification is necessary. It seems best to place the various proportions on a clean slab. Add to the alcohol—first the copper amalgam, secondly, the radiopaque substance, thirdly, the resin, and last, the amount of zinc oxide to supply the amount of bulk. Since resin is also bulk as well as binder, in fine canals very little zinc oxide may be needed. Gutta percha or metallic canal points

may be used in conjunction with the compound.

Numerous tests were made of all kinds of materials for leak-proof qualities by filling miniature glass tubes, the size of root canals, and suspending them in a solution of methylene blue. These and other tests and deliberations lead to the adoption of this compound for teaching and clinical purposes.

Laboratory tests have shown that pure zinc oxide and pure white resin made into a paste with alcohol will exert bacteriacidal effect on one planting. Add to this 5% copper amalgam powder and it remains effective indefinitely. Fig. No. 5 shows the result of the first test. Fig. No. 6 was the 13th test, tests being made at seven day intervals. The much larger halo in the first test was due to the alcohol which had by the thirteenth test become lost. Not one of the many agents experimented with, approached in any degree the same result.

FILLING THE ROOT CANAL WITH RESIN COPPER COMPOUND

Instrument used, smooth broach, method of insertion, agitation.

Instrument used, plugger, method of insertion, plunger.

Instrument used, paper point, method of insertion, brush.

Instrument used, reamer, method of insertion, reverse corkscrew.

With a selected paper point the size and length of the canal, carry a thin mix to all walls, evaporating the alcohol, and repeating this one or more times, followed by a heavier mix using a reamer of the size and length of canal, turned to the left, which appears to be the most suitable and most satisfactory way. In the use of a section of gutta percha point

Root Canal Therapy and Root Canal Filling

with this compound a suitable section is attached to the plugger point, and the stop device set to the correct length, the cone passing to the desired position.

In under-filling, correction may easily be made. To prevent discolouration the compound with copper amalgam must be removed from the coronal portion of the canal. This is quickly accomplished by washing the canal with chloroform, drying and freshly cutting the walls with a file.

Order of Procedure from reprint issued by the Faculty of Dentistry. *Vital Pulp*.

1st Sitting. Radiograph the region.
Place antiseptic anodyne dressing.

2nd Sitting. Sterilize field.
Anaesthetize the pulp.
Remove the pulp.
Bacterial test may be made from the pulp.
Determine length of root canal.
Seal dressing in with cement.

3rd Sitting. Remove dressing.
If bacterial test and clinical evidence are favourable fill apical end of canal.
Radiograph.
If apical end is properly filled, fill balance of canal.
Place oxchloride of zinc covering.

Putrescent Pulp or Wet Gangrene.

1st Sitting. Radiograph the region.
Sterilize the field.
Open into pulp chamber.
Place strong sterilizing agent in pulp chamber, seal with cement.

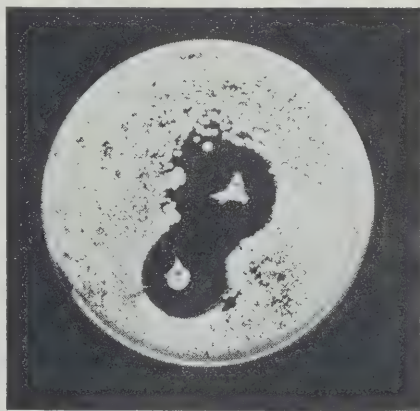


Figure 5.

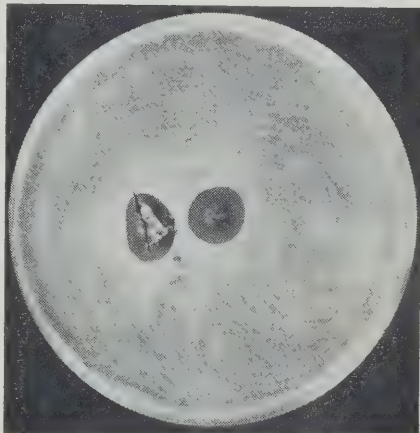


Figure 6.

2nd Sitting. Cautiously remove the contents of root canal.
Determine the length of root canal.
Bacterial test may be made.
Seal dressing with cement.

3rd Sitting. Sterilize the field.
If bacterial test and clinical evidence are favourable fill apical end of canal.
Radiograph.
If apical end is properly filled, fill balance of canal.

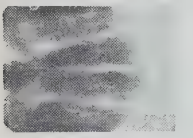
FIG. No. 7.

ROOT CANAL CASE HISTORY

Chart No. **K**

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Patient **MR. M. G. B.** Age **18** Address **TORONTO** Telephone

GENERAL HEALTH EXCELLENT		Pulps		Periapical Tissues		
ORAL HEALTH APICAL TISSUES GOOD FAMILY HISTORY, PERSONAL INTEREST AND CARE EXCELLENT, ALL OTHER TEETH VITAL. TOOTH OFF COLOR NEGATIVE VITALITY TEST. SLIGHTLY TENDER TO PERCUSSION. DEATH OF PULP. CONCUSSION		Vital	Normal	Abscess	Acute	
		Infected			Chronic	
		Non-Vital	Hypertrophied	Normal	Granulomata	
		Dry Gangrene				Cyst
			Wet Gangrene			
Record of Root Canal Operation  Radiogram of tooth before treatment.		 ESTIMATE Length 22 1/2 MM Size 3 Shape NORMAL Direction NORMAL	Devitalization Anesthesia Absorption Infiltration Pressure Conduction	Drug Date Applied Date Removed	Drug Used	
 Radiogram of tooth with measuring device in position.	Root Length 24	Diameter 5	Medication Date Drug Hours Applied			
 Radiogram of tooth showing filling apical third of canal.	Filling Material: ZINC OXIDE ROBIN CWA COMPOUND		Non-Vital Pulps Date 1-25-30 2-2-30 2-10-30	Extent Pulp Removal ENTIRELY	Dressing CREOSOTE OIL OF CLOVES ROOT FILLING	How Sealed CEMENT CEMENT CEMENT
Method: BRUSH AND REVERSE CORKSCREW SECTION CUTTA PERCHA AT APEX.		Culture Tests Date NOT MADE	Results			
232-533-1000		SIGNATURE: _____ Student PRIVATE PRACTICE Instructor				

[OVER]

Place oxchloride of zinc covering.

Physiological Closure of Apex.

- 1st Sitting. Radiograph the region.
 Remove contents of canal.
 Antiseptic dressing.
 Seal dressing with cement.
- 2nd Sitting. Sterilize field.
 Remove dressing.
 Wash, dry canal, fill apical end of canal.
 Radiograph, if apex is properly filled, and clinical evidence favourable, fill balance of canal.

A case from practice following the principles and procedure as presented and recorded on the Faculty of Dentistry

Root Canal Case History Chart. (Fig. No. 7.)

Reverse side of chart recording radiograph and clinical conditions at intervals. (Fig. No. 8.)

Case Record. J. M. Boy, Age 11.

A very large canal with large apical foramen. Fracture of tooth exposing pulp, (Fig. No. 9) before operation, Jan. 28, 1929. Infiltration anaesthesia. Pulp removed with No. 8 Kerr file. The root canal washed with sterile water, alcohol, dried, followed with a dressing of oil of cloves on a large, blunt specially prepared cotton cone. Sealed with cement. Feb. 1, 1929, slight exudate in canal, slight tenderness. Repetition of former treatment. Feb. 10, 1929, root

Root Canal Therapy and Root Canal Filling

FIG No. 8.

RECORD OF POST OPERATIVE EXAMINATIONS

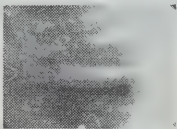
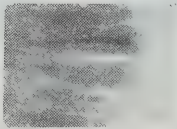
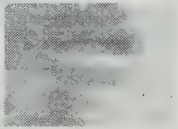
DATE	X-RAY TAKEN	REMARKS
SEPT. 14/31.		NO CHANGE IN APPEARANCE OF APICAL TISSUE TOOTH COMFORTABLE
JAN. 30/33		NO CHANGE IN APPEARANCE OF APICAL TISSUE TOOTH COMFORTABLE.
MAY 5/35		NO CHANGE IN APPEARANCE OF APICAL TISSUE TOOTH COMFORTABLE.
X-Ray 1st Year  X-Ray 2nd Year  X-Ray 5th Year 		
 		

Figure 9.

Figure 10.

canal filled with Kerr Sealer and specially prepared section of gutta percha. (Fig. 10) Radiograph. June 24, 1932, 2½ years later, clinical condition also

satisfactory. The procedure in this case was the same as previously described, the whole case record with radiographs being omitted to avoid repetition.

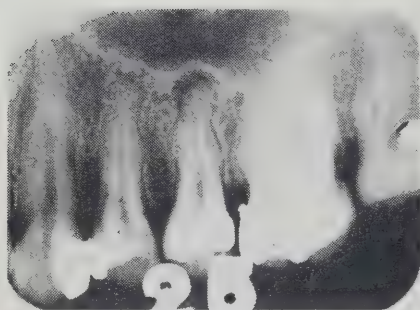


Figure 11.

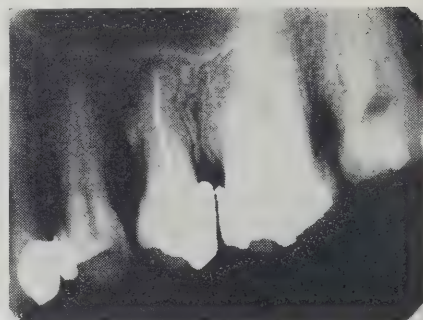


Figure 13.

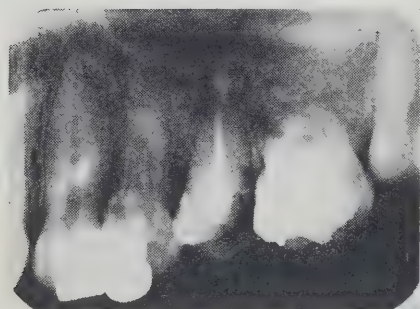


Figure 12.

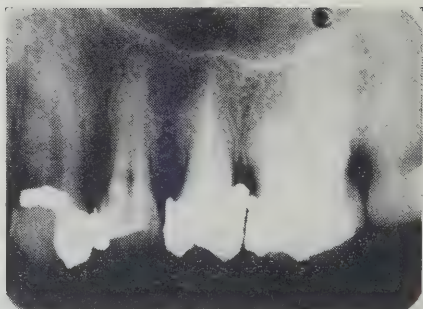


Figure 14.

Case Record. C. W. D. Woman, Age 34. Granuloma.

Fig. No. 11 Radiograph before treatment.

Jan. 17, 1921 Canal cleaned. Dressing beechwood creosote.

Jan. 20, 1921 Canal cleaned. Treatment Howe's Silver Nitrate, oil of cloves.

Feb. 2, 1921 Canal filled. Chloro percha gutta percha.

Fig. No. 12 Radiograph at date of root filling.

Fig. No. 13 One year after root filling. Radiographs were taken at two year intervals.

Fig. No. 14 Radiograph on March 11, 1935. Fourteen years after treatment.

The photographs were made by the Department of Radiodontia and Photography of the School of Dentistry.

This article has been put together with the idea of being suggestive, rather than exhaustive. It is based on the manner in which the subject is presented to the students in the School of Dentistry, University of Toronto, as well as to practitioners when opportunity has presented.

The root filling combination, the instrument selection and the procedure is the result of several years' deliberation of the Department of Operative Dentistry with the object of standardization, simplification, exactness and economy of time. In this Dr. A. E. Webster has been the active and directing personality. The discourse as a whole is based on an assimilation of the work of all those who have contributed to the root canal problem, the discussions with colleagues, and the almost unconscious influence of professional associations.

2234 Queen St. East. July 18—1935.

SINTERED DENTAL ALLOYS

by ORMAN WHITMAN, D.D.S., Calgary, Alberta.

THERE has been no real progress in the metallurgy of dental amalgam alloys since the work of the brilliant Dr. Black.

True, the refinement of metals has been improved, an improvement practically forced upon the dental profession by the forward steps of metallurgy as a whole. Indeed it would be difficult to buy metallic elements today in the crude form of yesterday. We do have measuring instruments which are more accurate, but after all measurement is relative and I would beg to suggest that those relativities of Dr. Black were quite as definite and as fact finding as those of the present industry.

One great forward thrust has been made by the dental profession through the Bureau of Standards at Washington.

The regulations of the Bureau of Standards, however small, were facts. They have served a great purpose. It is to be hoped that they were merely the thin edge of the wedge and that the time has arrived to drive it home.

That we were so tardy, in forcing delinquent manufacturers to come up to the present standards, is amazing in a profession in which competitive conditions are supposed to maintain.

Throughout the nineteenth century the cry has been entirely too much about finger-print amalgams and not nearly enough about lead substitutes. Firms which are making an honest effort are to be congratulated. Firms which have substituted bally-hoo for effort should be condemned. It is the dentist who takes the rap when the fillings do not stand up.

The Bureau has set up a list of speci-

fications but they are too low. It has been estimated that 90% of the metallic fillings, despite thirty years of inlays are silver amalgam. Yet it would be hard to find any type of filling that has been given a bigger boost or had more money spent on it in techniques, clinics, equipment, etc., than gold.

During the sociological indigestion period of the next two years gold work will not increase.

I sincerely hope that the research of the last three years on sintered alloys will open up new fields with a broader horizon.

A sintered alloy is one that is put together in powder form, its temperature raised under controlled conditions, until that element with the lowest melting point is liquified and forms the cementing substance for the balance of the elements in the alloy. On fracture, the material will cleave through the crystals, not through the eutectic cementing substance.

Sintering is not a new process.

The hardest alloy known, Tungsten Carbide, is made in this manner. Graphite-containing bearings are another application, while porous bearings are finding an extensive use. The latter are sintered with soluble materials which are subsequently leached out leaving quite porous, strong bearings.

PROCESS OF MANUFACTURE

The process of making a sintered dental alloy is briefly as follows:

Electrically refined metal powders are used. One method of manufacturing this powder is to overcurrent in the electro

bath, the material being thrown down as a sludge. The grain size should vary directly with the quantity used in the alloy. The proportions are carefully weighed and ball milled, to smear the softer, better amalgamating materials over the harder, more mercury-resisting elements. This mixture is then pressed in a hydraulic press, the pressure varying directly with the required density of the finished material. The pressed slugs are then sintered in an electric furnace, with a controlled atmosphere, to the desired temperature. Two or more of these operations may be done simultaneously. On cooling to room temperature, the slugs are reduced to metallic powder in the ordinary way, aged properly, or, as the metallurgists would say, heat treated, and the material is ready for use.

The question might rightly be asked: "Why all this trouble to prepare a powder which is essentially the same as that now in use?" I shall endeavour to point out the advantages of this material that have come to my notice to date.

Dental alloy is a precision material, fluctuation of the second decimal place being sufficient to make the difference between good and mediocre alloy.

Sintered metals have opened up new methods of *Absolute Control* of the following:

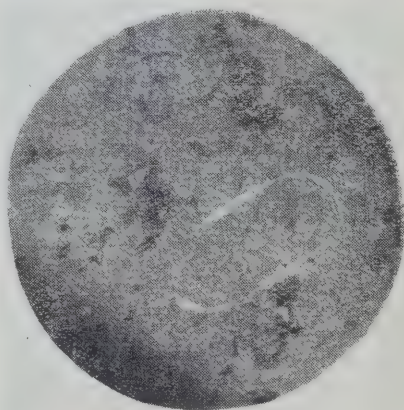
Density, Crystalline Structure, Grain Size, Hardness, Uniformity of Structure, Corrosion, Purity, Oxide Control, etc.

Taking each one of the above headings and comparing it with the present methods, we have the following:

DENSITY

There is little possibility of altering the density of melted elements, as the alloy usually assumes the mean of the

densities of the combined elements. The density of sintered alloys varies with the grain size and the hydraulic pressure to which it is subjected. Theoretically this should give the mercury a larger contact surface area, and practically, this seems to be the case. Imagine a very close-grained rubber sponge where the voids are more in the nature of lessened densities rather than clear-cut voids. (The last operation of shaving the alloy obscures, to some extent, the surface of the voids.)



Micro Photo times 75. Alloy E. 143. Outlined area shows structure of sintered alloy. Larger irregular dark areas are faults in the specimen.

CRYSTALLINE STRUCTURE

This can be controlled to a greater extent, because the element is of a constant crystalline structure as it comes from the bath. I grant that it is subject to change in the sintering heat treating process. *But*, as only about a third as much heat has to be used it is not subject to the wild formation of eutectics, complex alloys, crystallizing and breaking down of the same to form others as is the case in melted alloys, where the heat is raised

Sintered Dental Alloys

and lowered from the melting point of copper, etc. The changes are much more rapid at the upper end of the scale. There is room for years of work on this point alone on the present alloy which I hope will not be necessary in sintered alloys.

GRAIN SIZE

The grain size of a sintered alloy can be governed absolutely.

HARDNESS

The scratch hardness of cemented tungsten carbide is equal to the hardness of the hardest constituent, hence is equal to the hardness of "tungsten carbide" (chemical dict.). (Chemical Engineering Catalogue Co.) Thus it will be seen that the material may be increased in hardness, which quality may be drawn on later to improve the corrosion qualities of the alloy.

STRENGTH

The summarized results of the tests will answer this heading.

CORROSION

One of the greatest objections to the present day silver alloy is, that it will corrode to a remarkable extent. So extreme is it in the "Oil-well" region near here, that it is customary for the workers to discard their watches regularly, each year. Even the telephone wires corrode alarmingly. Some of the alloy fillings from this district are rather remarkable.

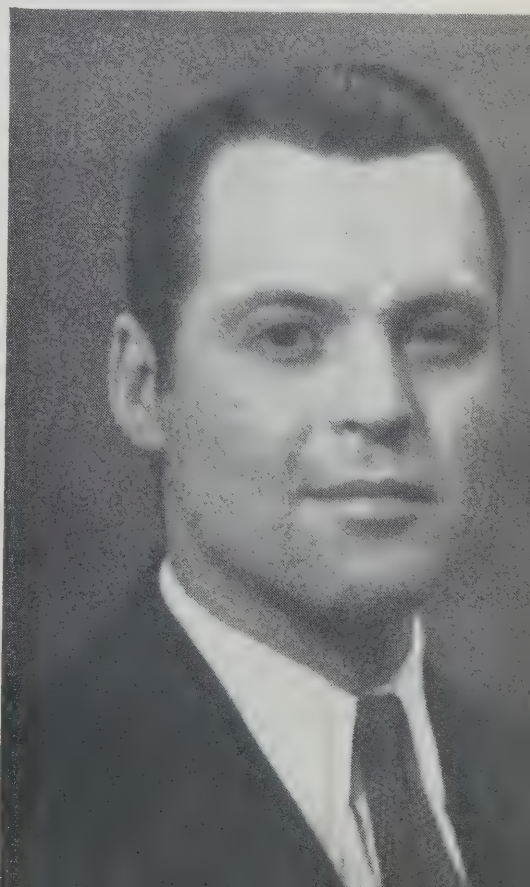
Corrosion may be handled from two angles:

1. Purity of constituents.
2. Incorporating elements which will impart stainless properties. Pure iron

does not corrode. Pure elements in a dental alloy (provided it was possible to procure same) would have the same effect.

The excess of strength (which some seem to maintain is not desirable in an alloy) can be balanced with stainlessness. This gives an opportunity for incorporating alloy weakening materials, such as ni. cr., etc. These substances do not bond readily with mercury and cannot be melted into the present alloy because the heat used would volatilize the lower melting-point elements, if equal distribution of the elements is to be obtained.

Sintering would, if so desired, permit their inclusion, and their inclusion imparts some of their qualities.



ORMAN WHITMAN

PURITY

There is no question of the purity of the metals, for, if there is a method of obtaining pure elements, it is electrically. This purity is *maintained* throughout the process and we know exactly what is included in the alloy. The eutectic alloy combines with the other elements, and then only in the most minute quantities. This differs from the present alloy, in which, by reason of the heating and cooling, complex unknown, combinations of elements may or may not be formed. This latter fact seems to me to be one way to explain the different appearance of the same alloy in the same mouth by the same dentist and assistant under like conditions of Ph. I do not mean to criticize unduly the present methods, but it would seem that in using present materials we cannot possibly avoid the unsatisfactory results of today.

OXIDES CONTROL

In the melting process, oxides are guarded against very carefully, but are much more difficult to control at the higher temperatures used and might readily be frozen into solution.

UNIFORMITY OF STRUCTURE

The structure of the sintered alloy will not vary under careful handling, that is relationship of one element to another in various parts of the alloy slug.

I have been unable to keep my melted material from varying. The only satisfactory way to handle this method seems to be to analyze it after it is frozen. The alloys will vary from location to location of the same melt, due to Sg. melting point, crystallization, interfacial tensions, etc., etc.

An effort has been made to make the above as brief as possible but still com-

plete enough so that the possibilities of *Control* in this method of making dental alloys may be realized.

It is too soon to draw any thorough conclusions for the ultimate composition and working qualities of this alloy. This I do know, there should be very little difference between the cost of the new and the old product.

A few of the tests and the manner in which they have been made may be interesting.

It must be understood that there are probably better combinations than those tried. (The work to date had been, merely, to compare with the best present-day alloys.)

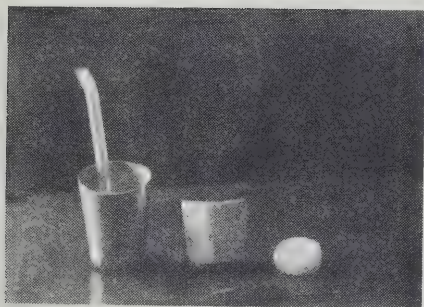
The alloy and mercury samples were made up in the following manner. . . . Temperature, humidity, time, were constant. A stainless steel cone as illustrated, fitted with a sintered glass filter (200 mesh) at base was filled with the best plaster obtainable. A carefully chosen glass rod stood in the centre. These were allowed to harden and set for twenty-four hours in the drying oven at low heat (50 degrees C.). The cone of plaster with the glass filter base was pressed out, and the glass tube carefully removed. The sintered glass filter was replaced in the steel cone and later followed by the hollow plaster cone.

The various alloys were mixed at the same pressure for the same time (mechanical mixer) in measured proportions by weight (alloy-mercury).

They were packed as nearly as possible with the same pressure, no mercury being expressed but allowed to pile up at the surface during the packing. The packing time was kept constant with a stop watch.

The sample was immediately placed in

Sintered Dental Alloys



Stainless steel cone, filter, rod, plaster cone.

a centrifuge with the base of the cone outward. The throw of the centrifuge forced the excess mercury back down through the tamped alloy and out through the sintered glass filter at the base. The number of revolutions per minute of the centrifuge was kept the same in all cases, (1200) so that the force expressing the mercury should be constant for every sample.

An interesting sidelight here was the fact that at nineteen hundred revolutions per minute, the samples were so dry that they crumbled upon removal from the mould.

These samples were left twenty-four hours, and seven days, respectively, each series being made up in pairs. They were carefully removed from their individual moulds, tested, relatively, by placing the cylinder over a wooden fork. The exact centre of the cylinder supports a soft wire which in turn supports a receptacle into which water was poured until fracture occurs.

This rather rustic apparatus gave surprisingly constant relative results.

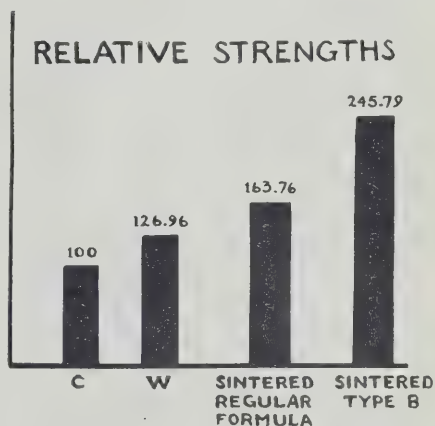
Samples of the most popular dental alloys were used for comparative tests. The formulae of these alloys were taken, (Hogden) and made up in the sintered manner. These sintered alloys were then

tested with their respective melted alloy types.

By slightly changing the composition of some of the sintered alloys the strength was still further increased.

Stainless strengths . . . (these are entirely different types of formula).

I have no satisfactory method of testing corrosiveness. Optically, there seems to be a decided improvement on coming from the corrosive bath.



Averages, alloy C. (popular type) taken as 100. These averages are taken from a series of 40 tests March 20, 1934, to February 23, 1935.

These descriptions have needlessly lengthened a long paper. They were given so that the results may be checked elsewhere.

It is my sincere hope that "sintered alloys" may make a real contribution to the progress of dentistry, and that the day will soon pass when a patient will look up at you with that expression of consternation in his face, meanwhile inquiring *sweetly* about the fractured piece of alloy he has asked to see as it came out of his mouth.

I would like to acknowledge the kindly assistance and caustic comments of Mr. J. W. Young, city chemist.

OPENING ADDRESS OF THE ELEVENTH ANNUAL FALL CLINIC OF THE MONTREAL DENTAL CLUB

by the President,
DR. EDWARD T. BOURKE.

GENTLEMEN:

It is my privilege and pleasure to open this, the Eleventh Annual Fall Clinic, held under the auspices of the Montreal Dental Club, and to bid you welcome.

Last May the Ontario Dental Association held its sixty-eighth annual meeting. Next month the American Dental Association will be holding its seventy-seventh session. We are young here, very young, compared to many other organizations, speaking in terms of the length of time we have been holding an organized meeting of this kind; and yet, I would say it is wonderful to be young and to be able to look forward to the future of our profession with hope.

A year ago at the Tenth Fall Clinic, the president in his address dwelt upon many of the things that had been achieved at these meetings up to that time. It was a report of progress. We add to that the benefits of last year's meeting and we find that we have made still further progress. It is interesting to look back at the road we have trod. During these ten years we have advanced and arrived at a certain place; and yet, somehow I feel that at this meeting we are just starting out fresh again. This, the Eleventh Fall Clinic, is the starting point of a new lap along the journey. Before I say anything more, I wish here to pay my respects to the men, members of the Montreal Dental Club, who were responsible for the inauguration of these annual clinics. It may interest some of you to know that a group of men here

were so sure of the value of a thing of this kind that they were willing to guarantee, out of their own pockets, any deficit that might occur during those first years. They were justified in their vision—these fall clinics have been successful and of great value in the onward march of dentistry. I say, I pay my respects to these men, who at this time will go unnamed. Their reward must surely be in the knowledge that they have aided their profession in its forward march.

That forward march must continue. Dentistry has far from arrived at her true goal. Dental diseases still exist. We are dentists—whose job can it possibly be but ours to minimize these diseases and continue to labour towards their eradication.

I have said I feel that this meeting is the starting point of a new lap along the way. Just in what frame of mind, with what enthusiasm and with what hopes we make this start, determines, to a large degree, the course we will follow and the ultimate success of our ventures.

Dentistry, and that means you and me, has great responsibilities to the public it serves. It has no mean task to perform. May we ever be mindful of this.

It is reported that Adam said to Eve in the Garden of Eden: "My dear, this is an age of transition," and men have claimed that, in every age down through the centuries. I think we can truly say it to-day—this is an age of transition. The social and economic life of the country is surely undergoing change, and where

Opening Address of the Eleventh Annual Fall Clinic

does dentistry stand? We are certainly a part of the whole scheme of things and must of necessity be affected when change takes place.

During the last few difficult years, we have heard often about the stuffed granaries—and yet we have heard of hungry people. Have we not, as far as our profession is concerned, a parallel situation? People are needing desperately the services that dentistry can provide and trained men are prepared to render that service; and yet, there is an economic chasm between the two that has not as yet been bridged. In my humble opinion, any government, whether civic, provincial or federal, which, during these times is endeavouring to tax health service, is only widening that chasm and making it more difficult to bridge, and some day it will have something to answer for.

We know that only a small percentage of the population is able to avail itself of the real services that dentistry can provide.

What is the answer? I, for one, certainly do not know. I do know, however, that an answer must be found, and whose task is that to be? Is it to be left to governments to determine what dentistry is to be?

I feel, desperately, that dentistry is on the threshold of its greatest opportunities to serve. It is being challenged. Is it prepared to take up the challenge? This is a serious question, and we must all, who have this profession of ours at heart, put on our thinking caps. Dentistry throughout the length and breadth of this country of ours, must join hands and heads and hearts and endeavour to work out a solution.

If we keep our eyes closed to the situation that exists, we may open them some

day just in time to discover that governments have stepped in and decided what to do about it. Rest assured, I am not opposed to government intervention in health matters, I rather welcome it, but that intervention must be guided by the best minds in the profession. The health of a nation belongs to no political party.

As I see it at the moment the task of organized dentistry, is to study the problem of how it can better serve the community, so that when the proper time comes, as it surely will come, it will be able to advise governments and not have governments tell it what course it should take. That is *our* job, and we needs must get about it. We must work on it through our individual clubs and societies, through our provincial bodies and through our national body, The Canadian Dental Association.

I trust I have not abused too much, the prerogative that is mine and that you will pardon my ramblings. My main task at this time, is to welcome you to this meeting, and I do that now with all the sincerity and enthusiasm of which I am possessed. I welcome the men of my own club which sponsors this meeting, I welcome men of sister societies of this city, men from other points of this Province of Quebec, men from Ontario, men from the Maritime Provinces, and men from neighbouring states of the great Republic. To those men here whose native tongue is other than my own would I especially say "Bienvenue".

The thing that we are about knows no boundary line of territory, of race or creed. We are joined together in a common endeavour and when I think in such terms I cannot help but welcome you with feeling and enthusiasm.

For these three days we are gathered

together to study, to work, to play, to share our knowledge, and to know one another better so that we may help each other and in turn help those depending upon us.

It is my sincere hope, that when this meeting is over and you have returned to your own particular field of endeavour, you will carry with you not only certain technical points which will help you in your daily tasks, but that you will carry also some new inspiration and new hope for the future of our profession

and an encouragement to press forward to better things.

This, I say is my sincere hope and it is the hope of those who have laboured to make this meeting a success, and I know it is the hope of the clinicians who will appear before you. If that can be achieved our labours will not have been in vain. Ours will be the joy of having served.

Gentlemen, I declare this meeting officially open. I bid you a heartfelt welcome, and I thank you.

MEDICODENTALLY SPEAKING !

by HUGH W. MacMILLAN, Cincinnati, Ohio, U.S.A.

Excerpts from address at the Eleventh Annual Fall Clinic of the Montreal Dental Club.

IF I had a son who wished to practice dentistry, I should insist that he complete, as a minimum, the premedical—not the predental—requirements.

I should explain to him that the fundamental sciences of anatomy, physiology, chemistry, and pharmacology are as applicable to the treatment of the teeth and jaw bones as to the remaining parts.

I should advise him to complete the first two years of the medical course before beginning the study of dentistry.

I should attempt to save him from the embarrassment of reading on the top of his final examination in anatomy, "Dental students answer the first eight questions, medical students answer ten".

I should advise him to secure his A.B., B.M., or M.D., but should not insist on this as degrees do not necessarily denote erudition or culture.

I should warn him about the evalu-

ation of his credits for advanced work or degrees in the future.

I should emphasize that correct diagnosis is the supreme achievement in health service.

I should remind him that surgical judgment is greater than technique.

I should expect him to have greater knowledge of preventive dentistry than a member of any other professional group.

I should expect him to be able to discuss all phases of bone phenomena with the orthopedic surgeon and possibly lead the discussion.

I should point out that he should approach his research problems from the standpoint of pure science.

I should like him to feel, in so far as his personal preparation is concerned, that he is able to take his equal place with those earnest workers engaged in the advancement of science.

THE FORUM

REPORT OF THE AMERICAN DENTAL ASSOCIATION OFFICIALS ON THE PRACTICE OF DENTISTRY UNDER COMPULSORY HEALTH INSURANCE SYSTEMS IN EUROPE

A. D. A. Press Release Service

FRANK M. CASTO, President, George B. Winter, President-elect, and Arthur C. Wherry, Past President of the American Dental Association, recently returned from Europe, where they investigated the practice of dentistry under compulsory health insurance systems.

Says President Casto, speaking of the practice of dentistry on the continent and the British Isles:

"The comparatively few dentists who are engaged in private practice exclusively and those who do but a small percentage of insurance practice are using approved scientific methods in diagnosis and treatment.

"My observation of dental practice outside of those mentioned in the above groups and which comprise by far the majority was most disappointing. It was almost invariably true that in proportion to the larger percentage of insurance practice engaged in, the lower the standards maintained and the poorer the quality of service rendered. The type of service in these cases was almost entirely confined to plastic fillings, particularly amalgam fillings and vulcanite dentures. The equipment of this group was inadequate, of inferior quality and of antique vintage.

"The most vivid impression I have of dentistry in the European countries visited is a living, walking, glaring monument of false teeth. So far as I could learn, there is practically no program for public dental health education and little effort made to promote preventive methods.

"One noteworthy thing that may be mentioned is that all unethical advertising is prohibited by law. This, to say the least, is a most happy and commendable situation.

"It may be said in fairness that all dentistry is not below the standard of American dentistry, but it is quite certain that dentistry under the present insurance plan is a demoralizing and degenerative process and I can see no hope of improvement, either in the type and quality of service or in the advancement of the profession as long as this plan is in effect."

Dr. Winter, President-elect, states:

"Last year and again on a recent trip, I made quite a study of the system in England, and found that their plan is not suitable to our practitioners or patients. Our Economic Committee is facing a very difficult problem. It is up to them to formulate a plan that will be just, yet suitable to our American practitioners and patients. I fear they must proceed on a new line and develop something original and different."

Past President Wherry expresses his opinion thus:

"I have the highest regard for the intelligence, professional attainment and ethical practices of the men practicing dentistry independently in the various European countries that I have travelled, but unfortunately they are a small percentage of the membership of the profession.

"My observations convinced me that the great majority of the poorer class of

the European countries are, in many instances, receiving dental service that is worthless because it does not attempt to provide anything but emergency relief and the cheaper class of restorative service. In no country did we find evidence of panel dentistry or government supervised dentistry delivering to the poor people a service anywhere comparable with the type of dentistry that has been furnished—many times free of cost—to the poor in this country. In addi-

tion, the manner in which machinery has been built up to handle the administrative features of supervised professional service is the most discouraging feature of the whole system, and it should arouse the men of the medical and dental professions in America to realize the hazard of such a system and the demoralizing influence it would have should it ever be injected into our own set-up." — *From the Journal of the Oregon State Dental Association, October, 1935.*

OWNERSHIP OF ROENTGENOGRAPHIC NEGATIVES

A ROENTGENOGRAPHIC negative made by a physician as an aid to diagnosis and treatment is, in Michigan, U. S. A., the property of the physician who makes it, unless he has entered into

an agreement waiving ownership. This decision was made by the Supreme Court of Michigan, September 9, and is binding on all courts in Michigan.—*Journal of A. M. A.*



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PRINCE EDWARD ISLAND



W. T. Ways, Charlottetown

Editor—M. H. GARVIN, Winnipeg

A S S O C I A T E E D I T O R S

SASKATCHEWAN



F. C. Harwood, Moose Jaw

NOVA SCOTIA



A. W. Faulkner, Halifax

QUEBEC



Campbell Morris, Montreal

ONTARIO



T. R. Marshall, Toronto

ALBERTA



John Clay, Calgary

NEW BRUNSWICK



J. F. Edgecombe, Saint John

MANITOBA



J. F. Morrison, Winnipeg

BRITISH COLUMBIA



J. S. Bricker, Vancouver

THE BENEVOLENT FUND

The Christmas Season is upon us, the time when we give and receive gifts, when the crackling of the Yule logs and the laughter of little children warms our hearts, and when the poor and needy in our midst receive greater consideration from us than at any other period of the year.

The time is most opportune, therefore, to bring before the dental profession of Canada, the unfortunate and unforeseen condition of some of our brethren, men who started their professional careers with high hopes and great ambitions, men who have worked hard and had good practices perhaps, and who were justified in feeling that old age had been adequately provided for, but who now find that investments have failed, that health is becoming undermined, and that poverty stares them in the face.

To whom should they turn, if not to the profession they have served for many years? If they do turn in this direction, what hope is there, under our present scheme of things, of receiving adequate assistance? In fact, our reaction to this problem might well be considered a test of our advancement as a profession. How far are we prepared to go to protect the weak, and reduce the suffering, physical and mental, of less fortunate confrères? What sacrifices are we prepared to make to encourage a spirit of good-will among

the dentists of Canada and so reach the summit in the realms of the intellect and of the spirit? It is written, "Though I speak with the tongues of men and of angels and have not charity, I am become as sounding brass, or a tinkling cymbal."

The Benevolent Fund of the British Dental Association started with donations amounting to about one hundred pounds, and it has grown until its annual income is about sixteen hundred pounds. Through the application of this aid, many of those who through unfortunate circumstances have tasted the bitterness of poverty have been delivered from their distress.

"The Dental Magazine and Oral Topics" states that the South African Dental Association has established a Dentists' Provident Fund. The Law Union and Rock Insurance Company has been appointed official insurer for the Association, and this company will undertake all forms of insurance at special terms for members of the Association, and will remit to the Association, for the Provident Fund, a percentage of all the premiums paid by members. This ensures that, from the outset, the fund will have a regular income, and will not be entirely dependent upon voluntary subscriptions.

The Relief Fund of the American Dental Association was started with the surplus of the amount subscribed for the relief of Californian Dentists at the time of the San Francisco earthquake, which fund has grown each year through voluntary contributions, and the annual sale of Christmas seals.

At the present time, the yearly income is approximately thirty thousand dollars, derived from the sale of the seals, contributions, and earnings on investments.



The function of this Relief Fund is to care for members of the American Dental Association who, through accident or illness, have become incapacitated, and are unable to continue in their usual practice, and who have exhausted their financial resources.

All cases of relief are first investigated by the local dental society, then by the state society, and, if approved by these two organizations, are subsequently investigated by the Relief Commission of the American Dental Association. If it is found that the applicant is deserving of aid, relief is given, in the proportion of one quarter from the local society, one quarter from the state society, and one half from the American Dental Association. The maximum amount given per month is one hundred dollars. Only the interest of this fund is available for relief.

At this Christmas season, can we not, as a profession, pledge ourselves to take a forward step in this important matter? Should we not be willing to sacrifice to accomplish this aim so precious to the heart and soul of our profession, and should not every man be prepared to play a part in the furthering of this noble project?

As Longfellow says, "If we could but read the secret history of our

enemies, we would find in each man's life, sorrow and suffering enough to disarm hostility." But we are not enemies—we are friends, and our friends need help. What are we going to do about it?

Dr. Leslie Allen of Lethbridge, Alberta, is chairman of the Benevolent Committee of the Canadian Dental Association and, as such, he has been working hard and faithfully to inaugurate a Dental Relief Fund in Canada. Let us support him wholeheartedly in this splendid work.

Unfortunately, provincialism has been one of the chief stumbling blocks in the way of carrying out this scheme. Any amount the writer is able to subscribe to such a worthy object, he wishes to go to the dentist most in need, whether that dentist lives in the wilds of Northern British Columbia, the sparsely settled areas in Northern Ontario and Quebec, or the isolated districts in the Maritime provinces.

Again we appeal to the national consciousness of the men in our profession, and also to their innate sympathy, that they may become aroused to this great need, and have the urge to participate in it. Surely there can be but few among us who, as a writer has said, are ready enough to act the Samaritan but without the oil, the wine and the twopence.

Suggestions for the speedy culmination of these plans will be most heartily welcomed by Dr. Allen and other officers of the Canadian Dental Association.

*"If any little word of mine can make a life the brighter,
If any little song of mine can make a heart the lighter,
God help me speak the little word, and take my bit of singing
And drop it in some lonely vale, to set the echoes ringing."*



ELEVENTH ANNUAL FALL CLINIC OF THE MONTREAL DENTAL CLUB

There was staged in Montreal, October 17-19, a brilliant dental convention. A record-breaking attendance was a tangible proof that those who attended from far and wide appreciated the efforts put forth by the leaders of the Club.

President Bourke in his opening address, which was received with unusual acclaim and which appears in this issue of THE JOURNAL, stressed the fact that a solution must be found for making dental service available to the rank and file of humanity, that this problem presented a challenge to our profession, and that this challenge must be met by concerted efforts of clubs, societies, provincial bodies and the Canadian Dental Association.

There were four internationally known guest speakers. Dr. Hugh W. McMillan of Cincinnati, spoke on surgical anatomy, local anaesthesia, broken hypodermic needles, teeth forced into the sinus, post-operative pain, drainage,

diagnosis, prognosis and surgery of the jaws. Dr. U. Garfield Rickert of Ann Arbor, Michigan, discussed the action and use of drugs in modern dental practice, also the relation of dental infection to the Arthritic Syndrom. Dr. Victor H. Sears of New York City, discussed the principles of denture construction, and Dr. C. W. Bierman of Minneapolis, spoke on "The Child as a Practice Builder".

The Round Table discussions were particularly helpful and the officers wish to extend, through the pages of THE JOURNAL, their deep appreciation of the service rendered by the various chairmen. The following officiated:—F. Cole, Toronto; S. A. Moore, London; J. P. Coupland, Ottawa; H. M. Halperin, Montreal; C. H. M. Williams, Toronto; W. R. Pond, Rutland, Vt., W. C. Bushell, Montreal and J. C. Flanagan of Montreal.

The sustained interest throughout the convention, the various forms of entertainment, the high standard of exhibits, the warmth of the reception, the genuineness of the desire of all officers to assist, made this convention an outstanding event in the dental history of Canada.

BOOK REVIEW

MEYER'S "NORMAL HISTOLOGY AND HISTOGENESIS OF THE HUMAN TEETH AND ASSOCIATED PARTS". Translated and edited by Herman R. Churchill, Tandarts (Utrecht), D.D.S. (Georgetown Univ.), Dr. Med. Dent. (Rostock). Assistant professor of dental histology, histo-pathology and comparative odontology, the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania; oral pathologist at the American Oncologic Hospital of Philadelphia.—300 pages—324 illustrations of which 26 are in colour—Published by J. B. Lippincott Company, 525 Confederation Building, Montreal.—Cloth, \$5.00.

This excellent modern textbook of outstanding quality is printed on very fine coated paper which makes the numerous illustrations stand out most attractively.

The author points out that during the last twenty-five years our knowledge of the minute anatomy and embryology of the mouth has fundamentally changed. This text is the result of actual investigation and discriminate consideration of controversial viewpoints. The wealth of unretouched photomicrographic re-

productions supports the statements made and should prove most useful as a guide in laboratory studies. The material used is of human origin and the subject matter is in accord with that proposed by the Survey Committee of the American Association of Dental Schools. The editor has added about twenty per cent to the original text.

The book is divided into two parts, the first part dealing with the normal histology of the enamel, dentine, dental pulp and the attachment apparatus. The second part discusses the histogenesis of the various parts of the tooth and the surrounding structures, the result of exhaustive study of the one hundred embryos that were dissected and sectioned.

One does not have to read very far before realizing that the author has not only accomplished what he set out to do, which is provide the dental student with an expert evaluation of the structures and tissues of the mouth, but that he has produced a work of great value to the practising dentist as well.

This book can be highly recommended to the dental student and also to the graduate dentist.

NEWS FROM THE PROVINCES

ALBERTA

Premier Aberhart states that health insurance will not be brought into effect for some time in Alberta. It will stand over until payment of basic dividends begin, since Social Credit means health benefits for the people.

SASKATCHEWAN

The first meeting of the Moose Jaw Dental Society for the season was held early in September beginning with a bowling tournament in the afternoon and followed by a banquet and program in the evening. The committees for the year were appointed and the programs for the next few months were outlined. Dr. R. H. McDougall gave an interesting travel talk on his trip to and from California where he attended the Pacific Coast Dental Conference held at Long Beach during the summer.

The Moose Jaw Dental Society held its October meeting in the Grant Hall Hotel on the evening of October 8th with the president, Dr. L. F. Hare, in the chair. After the dinner, Dr. W. Fraser Smith, of Regina, gave a very complete and instructive table clinic on the Stansbury technique for full dentures, which was followed by a question and discussion period. At the same meeting, Dr. F. -C. Harwood gave some short, practical hints, culled from dental literature or from experience. Preliminary plans were made at this meeting for a convention to be held in Moose Jaw next summer, with the financial assistance of the Saskatchewan Dental Council, at which it is hoped to revive the Saskatchewan Dental Society for the purpose of holding regular provincial dental conventions in the future. Dr. R. H. McDougall was appointed general chairman, with power to name his own committee to arrange the convention.

"After a lapse of ten years the Saskatchewan Dental Society is again to come before the dental eye. At a meeting of the committee appointed to put on a convention for Saskatchewan it was decided to hold it in Moose Jaw in May, 1936, the definite date to appear in next month's Journal and further particulars in subsequent issues. After the convention the pupil of the dental eye will have a decided pinpoint characteristic not being able to withstand the strong light of knowledge emanating from Saskatchewan's friendly convention in the 'Friendly City'!"

MANITOBA

CANADIAN FOUNDATION FOR PREVENTIVE DENTISTRY

The clinic work conducted by the Canadian Foundation for Preventive Dentistry continues to grow year by year, and is now assuming considerable proportions. When it is realized that these clinics are not initiated by the Foundation, but by the districts themselves, one realizes that the public of Manitoba is fast awakening to the value of good mouth health. Great credit is due to the various local organizations such as the Women's Institutes, United Farm Women, school trustees, teachers, etc., and also to the efficient Nursing Division of the Dept. of Health, for the good work they are all doing in the interests of the children of this province.

During the first nine months of this year 35 clinics have been held, covering 64 schools and 1,837 children have been operated on as against a total for 1934 of 19 clinics, covering 35 schools and 1,185 children operated on. In addition to this we did six days' work for the Provincial Unemployment Relief Commission and are looking after the clinics at Brooklands. This clinic was made possible by a grant from the Winnipeg Kiwanis Club, supplemented by an equal amount raised in the village. There are about 600 children in this village which is a suburb of Winnipeg. The clinic chairman was also asked to speak on the subject of dental clinics at the annual meeting of the Women's Institutes and at the conference of the Public Health Nurses.

DENTURE WORK FOR THOSE ON RELIEF

The Public Dental Health Committee of the Manitoba Dental Association has completed arrangements with the City of Winnipeg for some denture work for those on relief. A limited number will be allowed each month, the following cases receiving preference:

- A. Back to the Land cases.
- B. Disfiguration cases where replacement enables patient to get work.
- C. Cases where inability to masticate is interfering with medical recovery as certified by the City's Medical Relief Officer or Advisory Medical Board.
- D. Pregnant mothers.

Patients must apply at the medical department of City Relief, where a voucher will be

issued, which is the **ONLY AUTHORITY FOR MAKING A DENTURE.**

A list or panel of those dentists in Winnipeg willing to do this work for the fees mentioned will be struck. Patients will have the opportunity of going to their dentist of choice. Where no choice exists the top name on the panel will be used.

All dentures are to be constructed on the principles in general use for the best type of vulcanite denture construction.

The following is the schedule of fees:

1. Repair of dentures:
 - A. Vulcanization charge (simple repair)\$ 2.00
 - B. Replacing lost or broken tooth, per tooth additional to A..... .50
 - C. Adding vulcanite tooth to denture to replace one extracted natural tooth 4.00
Each additional tooth..... .50
 - D. Relining denture 7.00
 - E. Rebasings or making over old denture 10.00
2. Vulcanite dentures:
 - A. Full upper or full lower, each 20.00
 - B. Partial dentures as follows:
 - Up to 4 teeth..... 10.00
 - Up to 8 teeth 15.00
 - Up to 12 teeth..... 18.00
 - 2 clasps (stainless metal)..... 2.00

Departure from the above schedule without due cause will be penalized by the removal of the operator's name from the panel.

The Winnipeg Dental Society held its first meeting of the season, October 30, in the club rooms in the Medical Arts Building. Mayor Queen was guest of honour and Dr. Howard Geddes addressed the meeting on "Conduct of an Ethical Practice". The president, Dr. J. P. Gallagher, presided.

ONTARIO

TORONTO ACADEMY OF DENTISTRY

The Toronto Academy of Dentistry held its annual dinner meeting at Eaton's, College St., on October 28. Dr. E. C. Rosenow, of the Mayo Foundation, gave an illustrated lecture on the "Importance of Focal Infection as Related to Health". Two hundred and forty Toronto dentists with fifty or more Toronto

physicians as guests, listened intently to one of our great research workers as he, in a convincing manner, covered point after point in perfect logic. Some of his statements were as follows:

"Foci of infection are of basic importance in systemic diseases, but it does not follow that complete recovery will always result from the removal of a diseased tooth, since the tooth might not be the only focus."

"A localized focus of infection that cannot drain and does not heal, although symptomless, is a menace to the patient and a potent source of disease in other parts of the body."

"75% of pulpless teeth showing no evidence of periapical involvement clinically or radiographically are potent sources of infection, and some evidence of infection has been demonstrated about even a greater percentage."

"The infective organism is a streptococcus, usually of the diplococcus type."

"Bacteria found in chronic localized infections (focal infections) very often possess power of elective localization, e.g., organisms taken from a root infection of a patient suffering from kidney stones, if cultured in brain broth and injected into an animal, very often produce in that animal a similar kidney lesion; or organisms taken from a patient with joint lesions, when injected into an animal will produce joint manifestations in the animal and so forth."

"Pyorrhoea pockets are potent sources of infection as well as root end infection."

The speaker made a good impression on his audience with his message and Dr. Bill Kerr, President of the Academy, with his able council, must be commended for the splendid meeting.

The Hamilton Dental Association held its opening meeting in the Royal Connaught Hotel on October 29th. President, Dr. W. G. Foster, welcomed members from St. Catharines, Brantford, Kitchener, and Oakville to the meeting, which was addressed by Dr. E. C. Rosenow. The meeting was well attended, nearly a hundred being present to hear Dr. Rosenow's address on focal infection.

Congratulations to Dr. Matthew McKay, of Pembroke, Ontario, who in his 80th year was elected to represent North Renfrew at Ottawa.

News from the Provinces

At the October meeting of the London Dental Assistants' Association, Dr. Madge Macklin gave an interesting address on "Heredity". The president, Miss Marion Buttery, presided over the meeting.

QUEBEC

On October 25, Dr. J. Rae Carson addressed the Westmount Sub-division of the Catholic Women's Club on "Dentistry as a Factor in Public Health".

NEW BRUNSWICK

A meeting of the Moncton School Dental Clinic was held on October 8th, at which representatives of the five service clubs of the city were present. It was reported that about twenty-five underprivileged children per week were being looked after by the clinic under the supervision of Doctor Purdy.

NOVA SCOTIA

The Halifax Dental Society held its first meeting of the year on the evening of Thursday, November 7th. Drs. G. A. Chudleigh, H. M. Eaton, F. Duxbury, and G. K. MacIntosh provided the program for the evening, each giving his individual impression of the recently-held Montreal Fall Clinic.

In addition to the above-named Haligonians, the following Maritimers also journeyed to Montreal for the purpose of attending the Clinic:—

Drs. V. D. Crowe, H. L. Daniel and C. S.

Macarthur, of Truro, N. S.; Dr. Jas. McLeod, of Shubenacadie, N. S.; Dr. Ralph Dalgleish, of Sydney, N. S.; Dr. G. P. MacIntosh, of Parrsboro, N. S.; Dr. M. D. Finnigan, of Amherst, N. S.; Drs. F. L. Miller, R. G. Thompson and B. R. Ross, of Fredericton, N. B.; Dr. F. C. Simms, of Edmunston, N. B.; Drs. G. F. Leighton, Lee Allenach and J. C. McMullen, of Moncton, N. B.

The Dalhousie Dental Society arranged a meeting of the students and faculty on the evening of Friday, November 8th. Dean Woodbury and Dr. Bagnall were invited to address the gathering.

Dr. S. G. Ritchie was invited to give an address to the medical men gathered for the Dalhousie Refresher Course, held in August. His subject was "What the medical man should know about the teeth".

BRITISH COLUMBIA

A dental clinic for children was held in Dawson Creek, September 9 to 24 by the Health Unit. Two hundred and twenty-six patients attended and received the following treatments:

Prophylaxis, 224; amalgam fillings, 344; cement fillings, 61; enamel fillings, 70; extractions, 250.

Dr. Allan Peebles, of Victoria, who has made a study of state health insurance for the Provincial Department of Health, addressed the Kinsmen's Club at its regular weekly dinner meeting on October 17.

EMPIRE NEWS

GREAT BRITAIN

DENTISTRY IN THE NAVY

"It is recognized that dental fitness is as important as physical fitness in maintaining the health of the naval personnel. This is particularly necessary under modern conditions, for nowadays naval ratings have to use their brains, and it is only with a healthy body that satisfactory mental effort can be sustained."—*Rear-Admiral Snagge, in the Dental Magazine and Oral Topics, July, 1935.*

AUSTRALIA

DRY SOCKET

By Everett R. Magnus, B.D.S., Dental Hospital, Sydney, Australia.

There are many proprietary preparations which are claimed to be the panacea of all dry socket ills, and I have tried most of them with both good and bad results. With one preparation, however, I can honestly say that I have had nothing but good results, and it has been successful where all others have failed. As far as I know this mixture of

equal parts of aristol, orthoform and lanoline was first advocated by Dr. Charlton, and the method of its application is as follows:

The socket is dammed off, thoroughly cleansed and dried with alcohol and hot air, and then swabbed sparingly with aromatic sulphuric acid. Only a little of the acid should be impregnated in the swab, which should be dried out on a piece of cotton wool before insertion. There is no need to neutralize with sodium bicarbonate if this care be observed.

Aromatic sulphuric acid is usually used to stimulate the bone and so hasten repair, but in this case, since the reparative process occurs from without the socket, its action is more to cauterize the nerve endings, and so prevent

sensation of pain being transmitted to the higher nerve centres.

The aristol-orthoform-lanoline paste is shaped to approximately fit the socket, and placed in position. Relief is immediate and, in most cases, lasting.

Under ordinary circumstances the dressing may remain in situ for a week, but occasionally after two or three days there may be a slight purulent discharge and the dressing must be removed, the socket treated as before, and a fresh dressing applied. If the paste tends to wash out, the probable cause is that too much lanoline has been included.

Curettage is absolutely contraindicated.—*Excerpt from Dental Journal of Australia, August, 1935.*

GENERAL NEWS

DOCTOR PRICE RETURNS FROM AFRICA

Doctor and Mrs. Weston A. Price, of Cleveland, have returned safely from an extended trip into eastern and central Africa. It is interesting to learn that the studies made there revealed a very high level of immunity to dental caries in all the members of certain tribes living on native foods and according to formulas provided by their traditions. Other tribes had a low level of immunity to dental caries and degenerative diseases which could be related directly to their nutrition. Doctor Price states further that the Europeans who have gone into those countries with modern formulas for dietaries are breaking as they do in this country and that often in the midst of the natives who are maintaining a high immunity on their native foods.

HEALTH INSURANCE

The Medical Society Committee of California co-operated with the Senate Group in drafting a bill on health insurance known as the Medical Society Bill. The bill provided

for medical care of sixty per cent of the population, but practically ignored dentistry. The bill provided for an administrative commission of five, two of whom were to be physicians. Dentists were not mentioned. Dental care was limited to extractions and other dental care as prescribed by a physician and authorized by the commission. The chairman of the dental legislative committee raised serious objections at once and got through a few amendments that improved dentistry's place in the bill, the medical committee fighting him at every step. Opposition to other sections of the bill came from other sources and a number of amendments were made with the result that the bill was found to be unsatisfactory by the legislators in so many particulars that a new Senate Committee was appointed to bring in a more satisfactory program at the next session.—*Excerpt from paper entitled "Future Status and Standards", by Herbert E. Phillips, D.D.S., Chicago; in the Journal of the Michigan State Dental Society, September, 1935.*

IN MEMORIAM

J. ALLAN FRASER—of Victoria, B.C., aged 33, was drowned on October 20, while making a heroic attempt to rescue a companion

who had fallen overboard from their launch off Patricia Bay.

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LA GINGIVITE AIGUE, SYMPTÔME CLINIQUE DE LEUCEMIE

par VALMORE OLIVIER, D.D.S., Sherbrooke, Québec.

DEPUIS la publication d'une étude fouillée du Dr. Box, (1) de Toronto, sur l'infection de Vincent, nous sommes en mesure de traiter efficacement cette maladie si elle est purement locale, mais si, par accident, elle doit son origine à des conditions d'ordre général, nous pourrions épuiser toute la thérapeutique connue sans constater la moindre amélioration chez le patient. Dans ce cas d'exception, je le veux bien, il nous arrive d'apprendre sa mort au cours des quelques semaines qui suivent sa première visite à notre cabinet. Au certificat de décès le médecin inscrira:—

"Mort de septicémie à la suite d'une infection buccale"; s'il n'écrit pas:—
"Mort de septicémie à la suite du scorbut."

(1) Necrotic Gingivitis (Trench Mouth) par Harold Keith Box, D.D.S., Ph.D., Fascicule No. 14, distribué en 1930, par "the Canadian Dental Research Foundation."

Ce diagnostique resterait vrai, en bien des cas si les progrès remarquables accomplis, dans l'étude du sang, en ces dernières douze années, n'étaient venus nous éclairer comme dans les cas de leucémie, pour ne prendre qu'un exemple.

C'est dans les travaux récents des docteurs Ordway et Gorham (2) que j'ai puisé la matière nécessaire aux fins de cet article. Je tiens ici à témoigner au Dr. R. Duberger, pathologiste à l'Hôpital Général de Sherbrooke, toute ma reconnaissance pour sa généreuse collaboration dans la préparation de cette étude.

La Leucémie

La leucémie est caractérisée par l'hyperplasie des tissus producteurs de leucocytes. Elle est accompagnée d'un dérangement secondaire dans la composi-

(2) Oxford Monographs on Diagnosis and Treatment of the Blood, 1930 par les Drs. Thomas Ordway et Withington Gorham.

tion du sang, dérangement qui se manifeste par l'altération de la forme des leucocytes et aussi par un accroissement du nombre des globules blancs.

Il y a deux types de leucémie; le type myéloïde caractérisé par un excès de cellules granulocytes; et le type lymphoïde, qui se distingue du premier par un excédent de cellules lymphocytes. La leucémie peut donc avoir son origine dans la moelle ou dans les nobules de la lymphe; elle peut être chronique ou aiguë, parce que c'est seulement à ce stage de la maladie que nous sommes appelés en consultation. Les symptômes étant analogues au début dramatique de cette maladie et la ligne de démarcation entre ces deux types étant impossible à établir sans un examen du sang après la mort du malade, nous obtiendrons des renseignements suffisants en suivant le processus du type myéloïde, comme vous pourrez le constater dans un instant.

Le premier cas de leucémie sous sa forme aiguë fut rapporté par Frederick, en 1857; son patient mourut au bout de deux mois. En 1899, Ebstein en décrivit un portrait clinique. Frankel, en 1895, remarque spécialement les changements pathologiques du sang et affirme que les leucémies aiguës sont toutes de la classe lymphoïde dans laquelle l'augmentation des globules blancs se rencontre presque entièrement dans les lymphocytes. De fait, la majorité des auteurs niaient l'existence de la leucémie myéloïde. En ces dernières années (ne pas perdre de vue que l'ouvrage d'Ordway et Gorham fut publié en 1931) on a reconnu généralement que ce type se rencontre plus fréquemment qu'on ne le supposait dans le passé.

Sans aucun doute, toujours d'après les auteurs précités, un grand nombre de cas

rapportés comme lymphoïdes avant cette dernière décade seraient classés myéloïdes à la lumière de nos connaissances actuelles.

Histoire Clinique

La leucémie myéloïde aiguë présente les caractéristiques suivantes:—Souvent à la suite d'infections telles que l'amygdalite, un furoncle ou une dent abcédée, le patient tombe soudainement malade, sa température est élevée, il se plaint de céphalée, de malaise général et de prostration; ses gencives sont fréquemment enflées, rouges, spongieuses; il y a tendance marquée à l'hémorragie; les amygdales sont souvent congestionnées et atteintes de gangrène qui envahit la bouche; les glandes lymphatiques régionales du maxillaire inférieur et du cou grossissent rapidement.

Ce sont bien là tous les symptômes cliniques d'une infection de Vincent. Pourtant si vous voulez confirmer ce diagnostic visuel par une analyse différentielle du sang, vous trouverez une augmentation considérable des globules blancs en même temps qu'une diminution des globules rouges; vous pourrez alors soupçonner de la leucémie aiguë.

Par ailleurs, s'il y avait seulement diminution considérable des globules blancs, sans changement appréciable dans le nombre des globules rouges et que votre patient souffrit d'une stomatite gangreneuse, vous auriez affaire à un genre de leucémie aiguë aussi fatal que les deux types précités et que Shultz, en 1922, nomma angine agranulocytaire. Depuis cette date on en a rapporté une centaine de cas.

Si nous nous rappelons que le sang normal contient de 6000 à 8000 globules blancs par mm. cu., nous serons frappés de la disparité qui existe entre la

leucémie myéloïde aiguë où les globules blancs peuvent atteindre 30,000, et l'angine agranulocytaire où sur un total de 82 cas on en a trouvé une moyenne de 1210 et un minimum de 100 par mm. cu.

Considérons maintenant l'examen physique du patient atteint de leucémie myéloïde aiguë.

La pâleur de sa peau et de ses muqueuses est frappante dès le début; des hémorragies du fond de l'oeil sont fréquentes; il y a parfois de la surdité. Les lésions les plus caractéristiques se rencontrent dans la bouche où le processus leucémique provoque de l'enflure, de l'ulcération des gencives, des joues, du pharynx et des amygdales. Si la bouche est prise, c'est presque toujours le cas, il y aura grossissement des glandes lymphatiques du cou bien qu'on ait rapporté certains cas où les glandes ne pouvaient être palpées; il pourra se produire des complications du côté du coeur et des poumons; le foie peut s'hypertrophier légèrement; la rate est palpable d'habitude, mais pas toujours; des vomissements, une diarrhée opiniâtre et des hémorragies intestinales peuvent se produire; les os peuvent être sensibles à la pression bien que les grandes douleurs soient exceptionnelles; il y aura souvent sensibilité au sternum. Une élévation irrégulière de la température se produit dans la plupart des cas. Plus la maladie est aiguë, plus cette irrégularité est notoire. On constatera souvent des hémorragies de la peau et de temps en temps des nodules leucémiques, qui seront décrites plus loin, ou encore, de véritables zones de nécrose. L'examen du sang révèle une anémie marquée en même temps qu'une chute rapide et pro-

gressive du nombre des globules rouges et de l'hémoglobine.

Développement de la Maladie

La leucémie myéloïde aiguë a d'ordinaire un dénouement fatal rapide. S'il y a rémission, ce qui arrive rarement, elle n'est que de courte durée. La tendance à l'hémorragie augmente en même temps que progresse la maladie.

Diagnostic Différentiel

On ne peut pas sans un examen post mortem du sang et des tissus (le foie, la rate ou la moelle) classer une leucémie aiguë. Sans ce contrôle, un diagnostic de scorbut, de stomatite ulcéreuse, de diphtérie, d'endocardite, de tuberculose des glandes lymphatiques ou d'anémie pernicieuse, peut être erroné.

En 1929, Warren rapporta 28 cas de leucémie myéloïde confirmés par un examen post mortem. A cette époque les publications médicales en avaient rapporté, depuis 1903, 85 autres cas.

Le Traitement

Le traitement de cette maladie relève du médecin. Pour s'éviter des erreurs graves ou fort ennuyeuses, le dentiste doit suivre les progrès de la thérapeutique concernant cette altération sanguine. Ordway et Gorham disent:

"Les formes aiguës de leucémie résistent apparemment à tout traitement."

En présence d'une affirmation aussi catégorique on peut se demander comment il se fait qu'on ne puisse trouver de remède à un tel mal.

La médecine en est encore à conjecturer sur les causes probables de cette maladie. Il est douteux qu'on arrive à lui trouver un traitement curatif tant que les hématologistes n'auront pas résolu le

mystère de la provenance des globules rouges et blancs, provenance qui, malgré les nombreuses théories avancées jusqu'ici, reste toujours le secret de la Providence. Mais puisqu'il n'y a pas de moyens curatifs, est-ce à dire qu'il n'y aurait pas de moyens préventifs à un tel mal? Ne pourrait-on pas empêcher le sang de se détériorer chez un sujet en santé?

Il semble raisonnable de supposer que les organes hématopoïétiques (le foie et la rate) n'émettront du sang normal qu'en autant que les éléments nécessaires au maintien de leur équilibre se rencontreront dans l'organisme. Toute chose égale d'ailleurs, il semble rationnel de penser que le sang sera en santé ou malade selon qu'on se nourrira bien ou mal.

"Une nutrition défectueuse peut être la cause première des maladies du sang," nous disent les auteurs précités. Cette quasi affirmation n'est soulignée d'aucunes remarques. Elle aurait pu servir de prémices, il me semble, à une discussion intéressante sur l'importance des vitamines comme moyen préventif de la leucémie.

Un de nos confrères des Etats-Unis, le docteur Weston Price, de Cleveland (3), a publié, dans la revue *Oral Hygiene* des mois d'août et septembre, 1932, une étude remarquable sur les vitamines qui ouvre des horizons nouveaux aux disciples de la prévention et qui motiverait l'opinion que nous avançons dans les deux paragraphes précédents. Le travail du Dr. Price rend plus intelligibles toutes les questions se rattachant aux maladies

du sang et nous fait comprendre jusqu'à quel point une diète bien ordonnée peut être un facteur de santé.

S'il nous est arrivé de lire dans nos revues dentaires qu'une diète raisonnée ne semblait pas apporter de changement à l'état pathologique d'un patient affecté de la maladie de Vincent, il ne faudrait pas en conclure qu'une diète défectueuse ne peut en être la cause première. Entre autres opinions sur ce sujet, je veux citer celle du Dr. Nicholls, rédacteur du *Canadian Medical Association Journal*:—"Une carence de vitamine A dans la nourriture conduit à l'hyperplasie de l'épithélium sous-gingival qui le rend vulnérable aux attaques des micro-organismes." L'individu chez qui il existerait une leucopénie, (état où les leucocytes sont diminués en nombre) bien qu'apparemment en santé, serait donc exposé à contracter une infection de Vincent. Une fois atteint de ce mal, le patient ne guérira qu'en autant que nous saurons remédier à la cause éloignée: la carence de vitamine A.

Quand nous avons réussi à obtenir de nos patients qu'ils corrigent leurs vices d'alimentation, nous avons presque toujours constaté qu'il n'y avait pas récurrence de la maladie, alors que dans les cas où ils ne suivaient pas nos conseils, il y avait récurrence fréquente malgré nos traitements et malgré les soins hygiéniques que ces patients donnaient à leur bouche.

Autre constatation. Nous avons tous rencontré de nombreux patients chez lesquels les causes physiques prédisposantes à l'infection de Vincent étant absentes, et qui, soigneux, voir même méticuleux quant à leur hygiène buccale, n'en étaient pas moins atteints du terrible mal. Persisterons-nous, sans plus d'efforts de pensée, à leur dire que, la maladie étant

(3) New Light on some relationships between soil minerals deficiencies, Low Vitamin Foods, etc.—"*Oral Hygiene*" des mois d'août et septembre, 1932.

contagieuse, ils ont pu la contracter, quand le doute sur ce point siège déjà en maître dans notre esprit?

Combien de ces patients pouvaient souffrir de leucopénie passagère? Combien souffraient de leucopénie permanente? N'est-il pas arrivé à des confrères dans nos grands centres de traiter des patients pour de la gingivite aiguë et d'avoir vu ces malades s'éteindre dans un hôpital, emportés par une septicémie. Demandez-vous donc si ces personnes n'ont pas succombé à la suite d'une leucémie aiguë?

Je ne sache pas qu'au Canada quel-qu'un ait encore compilé de statistique sur ce sujet qui intéresse autant le dentiste, dans la sphère de ses activités propres, que le médecin. C'est parce que nous avons besoin d'être mieux informés que j'ai osé écrire ce travail, assuré que nos hommes de science y chercheront moins mes lacunes scientifiques que mon désir d'être de quelque utilité à ma profession.

Dans la discussion d'un sujet scientifique, les présomptions ne doivent pas tenir lieu d'arguments, je ne le conteste pas, mais, d'autre part, le procédé de comparaisons qui les suscite est essentiel à l'émancipation de l'esprit de quiconque pratique notre art. Voici l'histoire d'un cas de leucémie aiguë dépisté chez un de mes patients.

Cas Rapporté

"M. X. . . se présente à mon cabinet le 12 juin, 1931; il est âgé de 63 ans, il est de constitution robuste et a toujours mené une vie rangée. Il n'a jamais fait usage d'alcool ou de tabac. Il est fils de cultivateur, mais a vécu dans la ville de Sherbrooke depuis 40 ans, dans des conditions parfaites d'hygiène externe. Jus-

qu'en 1928 il n'a jamais été malade. A cette époque, il fait une dépression nerveuse de la durée d'un an et demi. Sa faiblesse devient telle, dans le temps, qu'il ne peut porter la main à la bouche. Le traitement qu'il reçoit alors le guérit. Il y a un an, le patient ressent de la faiblesse dans les jambes; la marche devient difficile, les jambes étant lourdes; plus tard, douleur dans l'articulation du coude, "comme si c'était pour casser". Enfin, il y a une semaine, éruption sous le nez laquelle disparaît. Il me consulte au sujet de ses gencives qui saignent au bord palatin dans la région des bicuspidés sup. droites. Le patient, bien que sexagénaire, a encore toutes ses dents, et fait remarquable, son articulé est parfait.

Je constate une gingivite aiguë limitée à la région des prémolaires et lui donne un premier traitement à l'iode et au nitrate d'argent à 35% en solution aqueuse, tel que prescrit par Box; je lui prescris du perborate de soude comme rince bouche et le prie de venir me voir dans deux jours. Le 17 juin, la muqueuse est en bonne voie de guérison, mais je constate une nouvelle infection dans la région des molaires supérieures gauches, infection qui, tout en diminuant d'intensité, envahit la région des incisives.

M'étant informé de l'alimentation habituelle de mon patient, j'apprends que depuis son jeune âge il n'est jamais entré ni lait ni crème dans sa diète, qu'il mange très peu de beurre et presque pas de fromage, aucun légume excepté les patates, pas de fruits si ce n'est du jus d'orange depuis 1928 seulement.

Je veux lui prescrire une diète abondante de ces aliments, mais il me répond qu'il ne saurait à son âge cultiver le goût de ce qui lui a toujours répugné.

Le 18 juin j'aperçois, au palais mou

et sur les piliers antérieurs, une dizaine de petites taches bleues, de petites ecchymoses semblables aux épanchements des varices sous la peau, mais bien circonscrites et du diamètre d'un petit pois sec. Cette constatation m'ennuie d'autant plus que l'asthénie du patient augmente de jour en jour, que sa température se maintient entre 99' et 100' sans que sa gingivite ne paraisse s'aggraver. Je lui conseille de consulter son médecin et de lui demander une analyse de sang.

Le 24 juin on m'appelle à l'hôpital pour continuer mes traitements à M. X... qui y est entré le matin même. La garde malade m'apprend que des taches bleues semblables à celles que j'avais constatées, recouvraient les jambes du patient. (Les nodules de la leucémie.)

Le jour même l'examen du sang donne le résultat suivant:

2,160,000 globules rouges au lieu de 4,500,000.

16,200 globules blancs au lieu de 6000 à 8000. Hémoglobine 45% au lieu de 75%.

La formule leucocytaire accuse sur toute la ligne des écarts considérables.

Le 28 mars 1931 un Wasserman avait été négatif.

Le 28 juin on fait une transfusion du sang qui porta les globules rouges de 1,630,000 qu'ils étaient la veille à 2,110,000 le 29, et les globules blancs se trouvent réduits de 17,000 à 16,000. Mais le 6 juillet les globules rouges sont tombés à 1,500,000 et les blancs sont rendus à 19,000. A cette date, la gangrène fait des ravages à la muqueuse du palais; la nécrose du palatin droit commence, les hémorragies se succèdent, la température a des écarts de 3 degrés au cours de la même journée et ce processus se continue jusqu'à la mort du patient, survenue le 15 juillet.

Malheureusement il a été impossible pour notre satisfaction personnelle de faire l'examen "post mortem" qui eût établi quelle forme de leucémie avait emporté notre patient.

VALMORE OLIVIER,

4 Wellington sud, Sherbrooke, P. Qué.

RECHERCHES STOMATOLOGIQUES SUR LE pH INTRABUCCAL

par le DR. J. SKOSOVSKY (de Strasbourg).

(Communication présentée à l'Association Française pour l'avancement des Sciences, Congrès de Nantes, juillet 1935.)

616.314; 612.313.3.

ON retrouve, dans la littérature, de nombreux ouvrages sur le pH salivaire; toutes les expériences, même les plus modernes, ont été faites in vitro sur des prélèvements et, en général, sur des individus normaux. Les techniques utilisées pour ces recherches peuvent se répartir en deux grandes classes:

10. Les méthodes colorimétriques, peu exactes dans le cas de la salive, sont avantageusement remplacées par

20. les méthodes électrométriques, d'une application un peu plus difficile, mais d'une plus grande précision; elles ne sont pourtant pas encore à l'abri de toute critique.

Il faut faire des réserves surtout sur les mesures opérées par prélèvement, la composition de la salive subissant des modifications de fait qu'elle est sortie du milieu buccal.

C'est pourquoi nous avons utilisé une technique spéciale permettant la mesure du pH salivaire in situ, ou plutôt d'un pH intrabuccal. C'est la méthode à l'antimoine de Vles, que nous avons modifiée en confectionnant des électrodes intrabuccales. Les mesures ont été faites sur des sujets normaux et sur d'autres pathologiques, dont le milieu buccal

était atteint d'une affection locale ou subissait le contre-coup d'une affection générale.

Contrairement à une opinion anciennement admise, nous avons vérifié que ce milieu est normalement légèrement acide, chez la grande majorité des individus.

Nous avons pu mettre en évidence une topographie du pH intrabuccal et nous avons ainsi observé trois zones acides: ouvertures des canaux de Stenon, de Warton et *vestibule supérieur et une zone alcaline, vestibule inférieur*. Les valeurs observées présentent une certaine constance chez un même individu et peuvent varier très légèrement d'un jour à l'autre.

Chez les sujets pathologiques, nous trouvons que les pyorrhéiques présentent une acidité plus marquée que les sujets normaux, tandis que les porteurs de gingivite se caractérisent par un début d'alcalinité franche.

Enfin, la fréquence des caries dentaires au point où le pH se trouve le plus bas, nous conduit à supposer que l'acidité de la cavité intrabuccale joue, dans la genèse de la carie, un rôle qu'on ne doit pas négliger.

L'Odontologie, No. 10, Octobre, 1935.

"L'ARTICULE DENTAIRE NORMAL, SES MODIFICATIONS LOCALES, REGIONALES ET GENERALES"

par le DR. FRANCOIS ACKERMANN, Docteur en médecine,
Médecin-dentiste à Genève (Suisse).

(*La Revue de Stomatologie.*) Tome 37—No. 6—Juin, 1935.

ETRAIT mis en brochure chez Masson et Cie Editeurs, 120 Boulevard Saint-Germain, Paris (VI°). Nous recevons cette brochure de soixante-sept pages écrite par un confrère dont, certes, l'érudition n'a d'égale que la minutie à étudier un sujet aussi important et trop méconnu.

L'auteur nous donne la vraie raison d'être des concavités, des sillons, des niches, des papilles et du paradentium, et il s'applique à étudier et à fouiller les secrets de l'articulé dentaire normal, pour les divulguer avec clarté et force détails.

Il nous offre d'abord une nomenclature basée sur la bio-physio-morphologie

puis nous démontre les modifications locales, proximales et générales résultant de l'articulé normal en y faisant ressortir les six facteurs susceptibles de les influencer, savoir: la topographie, la morphologie, la fonction, la cinématique, la dynamique et la biologie.

Le tout est bien trituré et mastiqué tant par les explications que par les illustrations (48 figures). Le lecteur en aura, certes, une assimilation facile.

A ceux qui n'ont pas eu l'avantage de lire cet ouvrage, nous conseillons fortement de le faire, car cette brochure contient des trésors inédits sur l'articulé normal.

VIGER PLAMONDON.

9ME CONGRES FRANCAIS DE STOMATOLOGIE

PARIS—FACULTE DE MEDECINE—5-10 OCTOBRE, 1936

LE 9ème Congrès Français de Stomatologie aura lieu à la Faculté de Médecine et à la Sorbonne du LUNDI 5 au SAMEDI 10 OCTOBRE, 1936, sous la présidence du Docteur PONT (de Lyon).

10. Rapport: Etude comparative des traitements des infections périapicales chroniques. Etat actuel de la question. Traitement médical et par les agents physiques (DR. SOLEIL). Traitement chirurgical (DR. DUCLOS). 2e Rapport:

Incidents, accidents et complications du traitement orthodontique (DR. IZARD).

Contre-indications absolues et relatives du traitement orthodontique (DR. QUINTERO).

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